INTER-AMERICAN TROPICAL TUNA COMMISSION

10TH STOCK ASSESSMENT REVIEW MEETING

La Jolla, California (USA)
12-15 May 2009

DOCUMENT SARM-10-04

THE FISHERY FOR TUNAS AND BILLFISHES IN THE EASTERN PACIFIC OCEAN IN 2008

INTRODUCTION

This report provides a summary of the fishery for tunas in the eastern Pacific Ocean (EPO), assessments of the major stocks of tunas and billfishes that are exploited in the fishery, and an evaluation of the pelagic ecosystem in the EPO, in 2007.

The report is based on data available to the IATTC staff in April 2009. The sections on bluefin (E), and the three sections on billfishes (G, H, I) are essentially the same as the corresponding sections of IATTC Fishery Status Report 6, published in 2008, except for updates of the figures.

All weights of catches and discards are in metric tons (t). In the tables, 0 means no effort or catch <0.5 t; - means no data collected; * means data missing or not available. The following abbreviations are used:

Species:

ALB	Albacore tuna (*Thunnus alalunga*)
BET	Bigeye tuna (*Thunnus obesus*)
BIL	Unidentified istiophorid billfishes
BKJ	Black skipjack (*Euthynnus lineatus*)
BLM	Black marlin (*Makaira indica*)
BUM	Blue marlin (*Makaira nigricans*)
BZX	Bonito (*Sarda* spp.)
CAR	Chondrichthyes, cartilaginous fishes nei[1]
CGX	Carangids (Carangidae)
DOX	Dorado (*Coryphaena* spp.)
MLS	Striped marlin (*Tetrapturus audax*)
MZZ	Osteichthyes, marine fishes nei
PBF	Pacific bluefin tuna (*Thunnus orientalis*)
SFA	Indo-Pacific sailfish (*Istiophorus platypterus)*
SKJ	Skipjack tuna (*Katsuwonus pelamis*)
SKX	Unidentified elasmobranchs
SSP	Shortbill spearfish (*Tetrapturus angustirostris*)
SWO	Swordfish (*Xiphias gladius*)
TUN	Unidentified tunas
YFT	Yellowfin tuna (*Thunnus albacares*)

Set types:

DEL	Dolphin
NOA	Unassociated school
OBJ	Floating object
	FLT: Flotsam
	FAD: Fish-aggregating device

[1] not elsewhere included

Fishing gears:	
FPN	Trap
GN	Gillnet
HAR	Harpoon
LL	Longline
LP	Pole and line
LTL	Troll
LX	Hook and line
OTR	Other[2]
NK	Unknown
PS	Purse seine
RG	Recreational
TX	Trawl

Ocean areas:	
EPO	Eastern Pacific Ocean
WCPO	Western and Central Pacific Ocean

Stock assessment:	
MSY	Maximum sustainable yield
B	Biomass
C	Catch
CPUE	Catch per unit of effort
F	Coefficient of fishing mortality
S	Index of spawning biomass
SBR	Spawning biomass ratio
SSB	Spawning stock biomass

Flags:	
BLZ	Belize
BOL	Bolivia
CAN	Canada
CHL	Chile
CHN	China
COK	Cook Islands
COL	Colombia
CRI	Costa Rica
ECU	Ecuador
ESP	Spain
GTM	Guatemala
HND	Honduras
JPN	Japan
KOR	Republic of Korea
MEX	Mexico
NIC	Nicaragua
PAN	Panama
PER	Peru
PYF	French Polynesia
SLV	El Salvador
TWN	Chinese Taipei
UNK	Unknown
USA	United States of America
VEN	Venezuela
VUT	Vanuatu

[2] Used to group known gear types

This section summarizes the fisheries for species covered by the IATTC Convention (tunas and other fishes caught by tuna-fishing vessels) in the eastern Pacific Ocean (EPO). The most important of these are the scombrids (Family Scombridae), which include tunas, bonitos, seerfishes, and mackerels. The principal species of tunas caught are yellowfin, skipjack, bigeye, and albacore, with lesser catches of Pacific bluefin, black skipjack, and frigate and bullet tunas; other scombrids, such as bonitos and wahoo, are also caught.

This report also covers other species caught by tuna-fishing vessels in the EPO: billfishes (swordfish, marlins, shortbill spearfish, and sailfish) carangids (yellowtail, rainbow runner, and jack mackerel), dorado, elasmobranchs (sharks, rays, and skates), and other fishes.

Most of the catches are made by the purse-seine and longline fleets; the pole-and-line fleet and various artisanal and recreational fisheries account for a small percentage of the total catches.

Detailed data are available for the purse-seine and pole-and-line fisheries; the data for the longline, artisanal, and recreational fisheries are incomplete.

The IATTC Regional Vessel Register contains details of vessels authorized to fish for tunas in the EPO. The IATTC has detailed records of most of the purse-seine and pole-and-line vessels that fish for yellowfin, skipjack, bigeye, and/or Pacific bluefin tuna in the EPO. The Register is incomplete for small vessels. It contains records for most large (overall length >24 m) longline vessels that fish in the EPO and in other areas.

The data in this report are derived from various sources, including vessel logbooks, observer data, unloading records provided by canners and other processors, export and import records, reports from governments and other entities, and estimates derived from the species and size composition sampling program.

1. CATCHES AND LANDINGS OF TUNAS, BILLFISHES, AND ASSOCIATED SPECIES

Estimating the total catch of a species of fish is difficult, for various reasons. Some fish are discarded at sea, and the data for some gear types are incomplete. Data for fish discarded at sea by purse-seine vessels with carrying capacities greater than 363 metric tons (t) have been collected by observers since 1993, which allows for better estimation of the total amounts of fish caught by the purse-seine fleet. Estimates of the total amount of the catch that is landed (hereafter referred to as the retained catch) are based principally on data from unloadings. Beginning with Fishery Status Report 3, which reports on the fishery in 2004, the unloading data for purse-seine and pole-and-line vessels have been adjusted, based on the species composition estimates for yellowfin, skipjack, and bigeye tunas. The current species composition sampling program, described in Section 1.3.1, began in 2000, so the catch data for 2000-2008 are adjusted, based on estimates obtained for each year, by flag. The catch data for the previous years were adjusted by applying the average ratio by species from the 2000-2004 estimates, by flag, and

summing over all flags. This has tended to increase the estimated catches of bigeye and decrease those of yellowfin and/or skipjack. These adjustments are all preliminary, and may be improved in the future. All of the purse-seine and pole-and-line data for 2008 are preliminary.

Data on the retained catches of most of the larger longline vessels are obtained from the governments of the nations that fish for tunas in the EPO. Longline vessels, particularly the larger ones, direct their effort primarily at bigeye, yellowfin, albacore, or swordfish. Data from smaller longliners, artisanal vessels, and other vessels that fish for tunas, billfishes, dorado, and sharks in the EPO were gathered either directly from the governments, from logbooks, or from reports published by the governments. Data for the western and central Pacific Ocean (WCPO) were provided by the Ocean Fisheries Programme of the Secretariat of the Pacific Community (SPC). All data for catches in the EPO by longlines and other gears for 2007 and 2008 are preliminary.

The data from all of the above sources are compiled in a database by the IATTC staff and summarized in this report. In recent years, the IATTC staff has increased its effort toward compiling data on the catches of tunas, billfishes, and other species caught by other gear types, such as trollers, harpooners, gillnetters, and recreational vessels. The estimated total catches from all sources mentioned above of yellowfin, skipjack, and bigeye in the entire Pacific Ocean are shown in Table A-1, and are discussed further in the sections below.

Estimates of the annual retained and discarded catches of tunas and other species taken by tuna-fishing vessels in the EPO during 1979-2008 are shown in Table A-2. The catches of tunas and bonitos by all gears during 2004-2008 by gear and flag, are shown in Tables A-3a-e, and the purse-seine and pole-and-line catches of tunas and bonitos during 2007-2008 are summarized by flag in Tables A-4a and A-4b. There were no restrictions on fishing for tunas in the EPO during 1988-1997, but the catches of most species have been affected by restrictions on fishing during some or all of the last six months of 1998-2008. Furthermore, regulations placed on purse-seine vessels directing their effort at tunas associated with dolphins have affected the way these vessels operate, especially since the late 1980s, as discussed in Section 3.

The catches have also been affected by climate perturbations, such as the major El Niño events that occurred during 1982-1983 and 1997-1998. These events made the fish less vulnerable to capture by purse seiners due to the greater depth of the thermocline, but had no apparent effect on the longline catches. Yellowfin recruitment tends to be greater after an El Niño event. The effects of El Niño events and other environmental conditions on the fisheries of the EPO are discussed further in Section J.5, ERROR! REFERENCE SOURCE NOT FOUND..

1.1. Catches by species

1.1.1. Yellowfin tuna

The annual catches of yellowfin during 1979-2008 are shown in Table A-1. Overall, the catches in both the EPO and WCPO have increased during this period. In the EPO, the El Niño event of 1982-1983 led to a reduction in the catches in those years, whereas the catches in the WCPO were apparently not affected. Although the El Niño episode of 1997-1998 was greater in scope, it did not have the same effect on the yellowfin catches in the EPO. The catch of yellowfin in the EPO, in 2002, 444 thousand t, was the greatest on record, but in 2004, 2005, 2006 and 2007 it decreased substantially, and the catch during 2008, 188 thousand t, was greater than the catches in 2006 and 2007, but less than the catches during 1985-2005. In the WCPO, the catches of yellowfin reached 353 thousand t in 1990, peaked at 457 thousand t in 1998, and remained high through 2003; they fell to 370 thousand t in 2004, increased in 2005 to 436 thousand t, and in 2006 and 2007 to 437 and 433 thousand t, respectively.

The annual retained catches of yellowfin in the EPO by purse-seine and pole-and-line vessels during 1979-2008 are shown in Table A-2a. The average annual retained catch during 1993-2007 was 267 thousand t (range: 167 to 413 thousand t). The preliminary estimate of the retained catch in 2008, 187

thousand t, was 9% greater than that of 2007, but 30% less than the average for 1993-2007. The average amount of yellowfin discarded at sea during 1993-2007 was about 2% of the total purse-seine catch (retained catch plus discards) of yellowfin (range: 1 to 3%) (Table A-2a).

The annual retained catches of yellowfin in the EPO by longliners during 1979-2008 are shown in Table A-2a. During 1993-2007 they remained relatively stable, averaging about 19 thousand t (range: 8 to 30 thousand t), or about 7% of the total retained catches of yellowfin. Yellowfin are also caught by recreational vessels, as incidental catch in gillnets, and by artisanal fisheries. Estimates of these catches are shown in Table A-2a, under "Other gears" (OTR); during 1993-2007 they averaged about 1 thousand t.

1.1.2. Skipjack tuna

The annual catches of skipjack during 1979-2008 are shown in Table A-1. Most of the skipjack catch in the Pacific Ocean is taken in the WCPO. The greatest reported catch in the WCPO, about 1.7 million t, occurred in 2007, and the greatest total catch in the EPO, 311 thousand t, occurred in 2006.

The annual retained catches of skipjack in the EPO by purse-seine and pole-and-line vessels during 1979-2008 are shown in Table A-2a. During 1993-2007 the annual retained catch averaged 181 thousand t (range 73 to 298 thousand t). The preliminary estimate of the retained catch in 2008, 296 thousand t, is 64% greater than the average for 1993-2007, and 1% less than the previous record-high retained catch of 2006. The average amount of skipjack discarded at sea during 1993-2007 was about 11% of the total catch of skipjack (range: 3 to 20%) (Table A-2a).

Small amounts of skipjack are caught with longlines and other gears (Table A-2a).

1.1.3. Bigeye tuna

The annual catches of bigeye during 1979-2008 are shown in Table A-1. Overall, the catches in both the EPO and WCPO have increased, but with considerable fluctuation. The catches in the EPO reached 105 thousand t in 1986, and have fluctuated between about 73 and 148 thousand t since then, with the greatest catch in 2000. In the WCPO the catches of bigeye increased to more than 77 thousand t during the late 1970s, decreased during the 1980s, and then increased, with lesser fluctuations, until 1999, when the catches reached more than 115 thousand t. Catches of bigeye in the WCPO increased significantly in 2004 to 146 thousand t. In 2005, 2006 and 2007 the catches of bigeye in the WCPO were 130, 134, and 138 thousand t, respectively.

Prior to 1994, the average annual retained catch of bigeye taken by purse-seine vessels in the EPO was about 8 thousand t (range 1 to 22 thousand t) (Table A-2a). Following the development of fish-aggregating devices (FADs), placed in the water by fishermen to aggregate tunas, the annual retained catches of bigeye increased from 35 thousand t in 1994 to between 44 and 95 thousand t during 1995-2007. A preliminary estimate of the retained catch in the EPO in 2008 is 76 thousand t. The average amount of bigeye discarded at sea during 1993-2007 was about 5% of the purse-seine catch of the species (range: 2 to 9%). Small amounts of bigeye have been caught in some years by pole-and-line vessels, as shown in Table A-2a.

During 1979-1993, prior to the increased use of FADs and the resulting greater catches of bigeye by purse-seine vessels, the longline catches of bigeye in the EPO ranged from 46 to 104 thousand t (average: 74 thousand t) about 89%, on average, of the retained catches of this species from the EPO. During 1994-2007 the annual retained catches of bigeye by the longline fisheries ranged from about 31 to 74 thousand t (average: 51 thousand t), an average of 45% of the total catch of bigeye in the EPO (Table A-2a). The preliminary estimate of the longline catch in the EPO in 2008 is 19 thousand t (Table A-2a).

Small amounts of bigeye are caught by other gears, as shown in Table A-2a.

1.1.4. Bluefin tuna

The catches of Pacific bluefin in the entire Pacific Ocean, by flag and gear, are shown in Table A-5. The data, which were obtained from the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC), are reported by fishing nation or entity, regardless of the area of the Pacific Ocean in which the fish were caught.

The catches of Pacific bluefin in the EPO during 1979-2008, by gear, are shown in Table A-2. During 1993-2007 the annual retained catch of bluefin from the EPO by purse-seine and pole-and-line vessels averaged 3,700 t (range 600 t to 10 thousand t). The preliminary estimate of the retained catch of bluefin in 2008, 4,200 t, is 500 t greater than the average for 1993-2007. Small amounts of bluefin are discarded at sea by purse-seine vessels (Table A-2a).

1.1.5. Albacore tuna

The catches of albacore in the entire Pacific Ocean, by gear and area (north and south of the equator) are shown in Table A-6. The catches of albacore in the EPO, by gear, are shown in Table A-2a. A significant portion of the albacore catch is taken by troll gear, included under "Other gears" (OTR) in Table A-2a. The catch data were obtained from IATTC data for the EPO and from data compiled by the SPC for the WCPO.

1.1.6. Other tunas and tuna-like species

While yellowfin, skipjack, and bigeye tunas comprise the most significant portion of the retained catches of the purse-seine and pole-and-line fleets in the EPO, other tunas and tuna-like species, such as black skipjack, bonito, wahoo, and frigate and bullet tunas, contribute to the overall harvest in this area. The estimated annual retained and discarded catches of these species during 1979-2008 are presented in Table A-2a. The catches reported in the unidentified tunas category (TUN) in Table A-2a contain some catches reported by species (frigate or bullet tunas) along with the unidentified tunas. The total retained catch of these other species by these fisheries was about 11 thousand t in 2008, which is greater than the 1993-2007 annual average retained catch of about 4 thousand t (range: 500 t to 19 thousand t).

Black skipjack are also caught by other gears in the EPO, mostly by coastal artisanal fisheries. Bonitos are also caught by artisanal fisheries, and have been reported as catch by longline vessels in some years.

1.1.7. Billfishes

Catch data for billfishes (swordfish, blue marlin, black marlin, striped marlin, shortbill spearfish, and sailfish) are shown in Table A-2b.

Swordfish are caught in the EPO with large-scale and artisanal longline gear, gillnets, harpoons, and occasionally with recreational gear. The average annual longline catch of swordfish during 1993-2007 was 10 thousand t, but during 2001-2004 was about 17 thousand t. It is not clear whether this is due to increased abundance of swordfish or increased effort directed toward that species.

Other billfishes are caught with large-scale and artisanal longline gear and recreational gear. The average annual longline catches of blue marlin and striped marlin during 1993-2007 were about 5 thousand and 3 thousand t, respectively. Smaller amounts of other billfishes are taken by longline.

Unfortunately, little information is available on the recreational catches of billfishes, but they are believed to be substantially less than the commercial catches for all species.

Small amounts of billfishes are caught by purse seiners, but these are considered to be discarded, although some may be landed but not reported. These data are also included in Table A-2b.

1.1.8. Other species

Data on the catches and discards of carangids (yellowtail, rainbow runner, and jack mackerel), dorado, elasmobranchs (sharks, rays, and skates), and other fishes caught in the EPO are shown in Table A-2c.

Dorado are unloaded mainly in ports in South and Central America. Although the catches are greater than 10 thousand t in some years, the gear types used are often not reported.

1.2. Distributions of the catches of tunas

1.2.1. Purse-seine catches

The average annual distributions of the purse-seine catches of yellowfin, skipjack, and bigeye, by set type, in the EPO during 1998-2007, are shown in Figures A-1a, A-2a, and A-3a, and preliminary estimates for 2008 are shown in Figures A-1b, A-2b, and A-3b. The catch of yellowfin in 2008, as in 2006 and 2007, was significantly less than the average of 1998-2007. Yellowfin catches from sets associated with dolphins in the Northern areas off Mexico and Central America have been significantly lower for the past several years. The yellowfin catches in the Equatorial region off South America decreased in 2008, as they did in 2007. The skipjack catch in 2008 was greater than the average of 1998-2007. Significant catches of skipjack were taken in unassociated sets around the Galapagos Islands and in the nearshore areas off Ecuador and Peru. Greater catches of skipjack were also observed in floating-object sets in the offshore areas between 0° and 10°S and around 140°W to 150°W. The bigeye catch in 2008 was greater than that of 2007, and was also greater than the 1998-2007 average. Bigeye are not often caught north of about 7°N, and the catches of bigeye have decreased in the inshore areas off South America for several years. With the development of the fishery for tunas associated with FADs, the relative importance of the inshore areas has decreased, while that of the offshore areas has increased. Most of the bigeye catches are taken in sets on FADs between 5°N and 5°S.

1.2.2. Longline catches

Data on the spatial and temporal distributions of the catches in the EPO by the distant-water longline fleets of China, Chinese Taipei, French Polynesia, Japan, the Republic of Korea, Spain, the United States, and Vanuatu are maintained in databases of the IATTC. Bigeye and yellowfin tunas make up the majority of the catches by most of these vessels. The distributions of the catches of bigeye and yellowfin tunas in the Pacific Ocean by Japanese, Korean, and Chinese Taipei longline vessels during 2003-2007 are shown in Figure A-4. Data for the Japanese longline fishery in the EPO during 1956-2003 are available in IATTC Bulletins describing that fishery.

1.3. Size compositions of the catches of tunas

1.3.1. Purse-seine, pole-and-line, and recreational fisheries

Length-frequency samples are the basic source of data used for estimating the size and age compositions of the various species of fish in the landings. This information is necessary to obtain age-structured estimates of the populations for various purposes, including the integrated modeling that the staff has employed during the last several years. The results of such studies have been described in several IATTC Bulletins, in its Annual Reports for 1954-2002, and in its Stock Assessment Reports.

Length-frequency samples of yellowfin, skipjack, bigeye, Pacific bluefin, and, occasionally, black skipjack from the catches of purse-seine, pole-and-line, and recreational vessels in the EPO are collected by IATTC personnel at ports of landing in Ecuador, Mexico, Panama, the USA, and Venezuela. The catches of yellowfin and skipjack were first sampled in 1954, bluefin in 1973, and bigeye in 1975. Sampling has continued to the present.

The methods for sampling the catches of tunas are described in the IATTC Annual Report for 2000 and in IATTC Stock Assessment Reports 2 and 4. Briefly, the fish in a well of a purse-seine or pole-and-line vessel are selected for sampling only if all the fish in the well were caught during the same calendar month, in the same type of set (floating-object, unassociated school, or dolphin), and in the same sampling area. These data are then categorized by fishery (Figure A-5), based on the staff's most recent stock assessments.

Data for fish caught during the 2003-2008 period are presented in this report. Two sets of length-

frequency histograms are presented for each species, except bluefin and black skipjack; the first shows the data by stratum (gear type, set type, and area) for 2008, and the second shows the combined data for each year of the 2003-2008 period. For bluefin, the histograms show the 2003-2008 catches by commercial and recreational gear combined. For black skipjack, the histograms show the 2003-2008 catches by commercial gear. Only a small amount of catch was taken by pole-and-line vessels in 2008, and no samples were obtained from these vessels.

For stock assessments of yellowfin, nine purse-seine fisheries (four associated with floating objects, three associated with dolphins, and two unassociated) and one pole-and-line fishery are defined (Figure A-5). The last fishery includes all 13 sampling areas. Of the 1,027 wells sampled, 630 contained yellowfin. The estimated size compositions of the fish caught during 2008 are shown in Figure A-6a. The majority of the yellowfin catch was taken in sets associated with dolphins and in unassociated sets. Most of the larger yellowfin (>100 cm) were caught throughout the year in the Inshore dolphin fishery, during the first, second, and third quarters in the Northern dolphin-associated fishery, and during the first and fourth quarters in the Southern dolphin-associated fishery. Larger yellowfin were also caught during the first and fourth quarters in the Southern unassociated fishery. A small amount of large yellowfin was taken in the Southern floating-object fishery throughout the year, and in the Equatorial floating-object fishery in the first and second quarters. Yellowfin, ranging from 40 to 60 cm in length, was evident in all the floating-object fisheries during the year, and in the first, second and third quarters in the Northern unassociated fishery. Small amounts of yellowfin in the 50- to 70-cm size range were taken by pole-and-line vessels, mostly during the third and fourth quarters.

The estimated size compositions of the yellowfin caught by all fisheries combined during 2003-2008 are shown in Figure A-6b. The average weights of the yellowfin caught in 2008 were greater than those of 2006 and 2007, but considerably less than those of the 2003-2004 period.

For stock assessments of skipjack, seven purse-seine fisheries (four associated with floating objects, two unassociated, one associated with dolphins) and one pole-and-line fishery are defined (Figure A-5). The last two fisheries include all 13 sampling areas. Of the 1,027 wells sampled, 837 contained skipjack. The estimated size compositions of the fish caught during 2008 are shown in Figure A-7a. Large amounts of skipjack in the 40- to 50-cm size range were caught in all of the floating-object fisheries and in the Southern unassociated fishery throughout the year. Larger skipjack in the 50- to 70-cm size range were caught primarily during the third and fourth quarters in all of the floating-object fisheries. Negligible amounts of skipjack were caught by pole-and-line vessels.

The estimated size compositions of the skipjack caught by all fisheries combined during 2003-2008 are shown in Figure A-7b. The average weight of skipjack in 2008, 2.2 kg, was less than the average weights for the previous five years.

For stock assessments of bigeye, six purse-seine fisheries (four associated with floating objects, one unassociated, one associated with dolphins) and one pole-and-line fishery are defined (Figure A-5). The last three fisheries include all 13 sampling areas. Of the 1,072 wells sampled, 271 contained bigeye. The estimated size compositions of the fish caught during 2008 are shown in Figure A-8a. In 2000 the majority of the catch was taken in floating-object sets in the Equatorial area, whereas from 2001 to 2003 the majority of the bigeye catch was taken in sets on floating objects in the Southern area. In 2008, as in 2004-2007, nearly equal amounts of bigeye were taken in the Northern, Equatorial, and Southern floating-object fisheries. Smaller bigeye in the 40- to 80-cm size range were caught throughout the year in the Southern floating-object fishery, in the second quarter in the Equatorial floating-object fishery, and during the second, third and fourth quarters in the Northern floating-object fishery. Larger bigeye (>100 cm.) were caught primarily in the first and second quarters in the Equatorial and Southern floating-object fisheries. Small amounts of bigeye were caught in unassociated sets, and in floating-object sets in the Inshore area. There were no recorded catches of bigeye by pole-and-line vessels.

The estimated size compositions of the bigeye caught by all fisheries combined during 2003-2008 are

shown in Figure A-8b. The average weight of bigeye in 2008 was considerably higher than in the previous 5 years.

Pacific bluefin are caught by purse-seine and recreational gear off California and Baja California from about 23°N to 35°N, with most of the catch being taken during May through October. During 2008 bluefin were caught between 26°N and 32°N from May through September. The majority of the catches of bluefin by both commercial and recreational vessels were taken during May, June and July. Prior to 2004, the sizes of the fish in the commercial and recreational catches have been reported separately. During 2004-2008, however, small sample sizes made it infeasible to estimate the size compositions separately. Therefore, the sizes of the fish in the commercial and recreational catches of bluefin were combined for each year of the 2003-2008 period. The average weight of the fish caught during 2008 was considerably less than those of the previous five years. The estimated size compositions are shown in Figure A-9.

Black skipjack are caught incidentally by fishermen who direct their effort toward yellowfin, skipjack, and bigeye tuna. The demand for this species is low, so most of the catches are discarded at sea, but small amounts, mixed with the more desirable species, are sometimes retained. Twenty-nine samples of black skipjack were taken in 2008. The estimated size compositions for each year of the 2003-2008 period are shown in Figure A-10.

1.3.2. Longline fishery

The estimated size compositions of the catches of yellowfin and bigeye by the Japanese longline fishery in the EPO during 2003-2007 are shown in Figures A-11 and A-12. The average weights of both yellowfin and bigeye taken by that fishery have remained about the same throughout its existence. Information on the size compositions of fish caught by the Japanese longline fishery in the EPO during 1958-2003 is available in IATTC Bulletins describing that fishery.

1.4. Catches of tunas and bonitos, by flag and gear

The annual retained catches of tunas and bonitos in the EPO during 2004-2008, by flag and gear, are shown in Tables A-3a-e. These tables include all of the known catches of tunas and bonitos compiled from various sources, including vessel logbooks, observer data, unloading records provided by canners and other processors, export and import records, estimates derived from the species and size composition sampling program, reports from governments and other entities, and estimates derived from the species- and size-composition sampling program. Similar information on tunas and bonitos prior to 2001, and historic data for tunas, billfishes, sharks, carangids, dorado, and miscellaneous fishes are available on the IATTC web site. The purse-seine and pole-and-line catches of tunas and bonitos in 2007 and 2008, by flag, are summarized in Tables A-4a and A-4b (top panels).

1.5. Landings of tunas and bonitos by purse-seine and pole-and-line vessels

The landings are fish unloaded from fishing vessels during a calendar year, regardless of the year of catch. The country of landing is that in which the fish were unloaded or, in the case of transshipments, the country that received the transshipped fish. Preliminary landings data for 2007 and 2008 (Tables A-4a and A-4b, lower panels) indicate that, of the 569 thousand t of tunas and bonitos landed in 2008, 53% was landed in Ecuador and 22% in Mexico. Other countries with significant landings of tunas and bonitos caught in the EPO included Colombia and Venezuela with 10% and 4% respectively. It is important to note that, when final information is available, the landings currently assigned to various countries may change due to exports from storage facilities to processors in other nations.

2. FISHING EFFORT

2.1. Purse seine

Estimates of the numbers of purse-seine sets of each type (associated with dolphins, associated with floating objects, and unassociated) in the EPO during the 1993-2008 period, and the retained catches of

these sets, are shown in Table A-7 and in Figure 1. The estimates for vessels ≤363 t carrying capacity were calculated from logbook data in the IATTC statistical data base, and those for vessels >363 t carrying capacity were calculated from the observer data bases of the IATTC, Colombia, Ecuador, the European Union, Mexico, Nicaragua, Panama, the United States, and Venezuela. The greatest numbers of sets associated with floating objects and unassociated sets were made from the mid-1970s to the early 1980s. Despite opposition to fishing for tunas associated with dolphins and the refusal of U.S. canners to accept tunas caught during trips during which sets were made on dolphin-associated fish, the numbers of sets associated with dolphins decreased only moderately during the mid-1990s, and in 2003 were the greatest recorded.

There are two types of floating objects, flotsam and FADs. The occurrence of the former is unplanned from the point of view of the fishermen, whereas the latter are constructed by fishermen specifically for the purpose of attracting fish. FADs have been widely used for about 14 years, and their relative importance has increased during this period, while that of flotsam has decreased, as shown by the data in Table A-8.

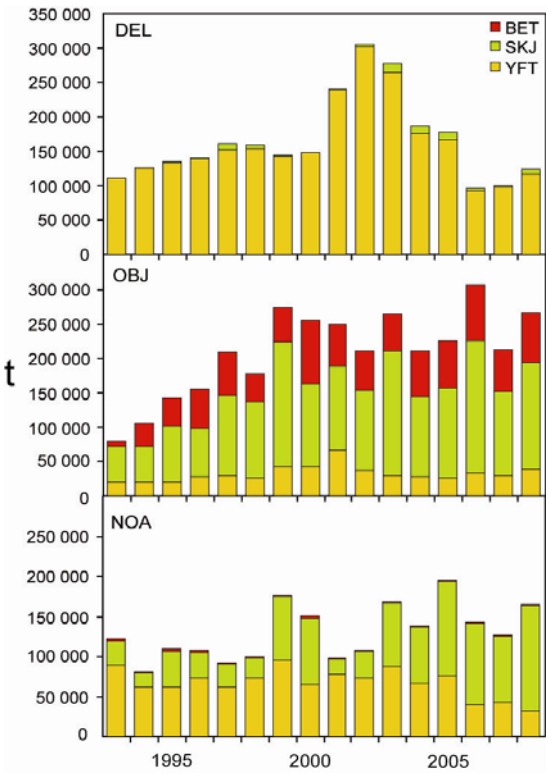

Figure 1. Purse-seine catches of tunas, by species and set type, 1993-2008

2.2. Longline

The reported nominal fishing effort (in thousands of hooks) by longline vessels in the EPO, and their catches of the predominant tuna species, are shown in Table A-9.

3. THE FLEETS

3.1. The purse-seine and pole-and-line fleets

The IATTC staff maintains detailed records of gear, flag, and fish-carrying capacity for most of the vessels that fish with purse-seine or pole-and-line gear for yellowfin, skipjack, bigeye, and/or Pacific bluefin tuna in the EPO. The fleet described here includes purse-seine and pole-and-line vessels that have fished all or part of the year in the EPO for any of these four species.

Historically, the owner's or builder's estimates of carrying capacities of individual vessels, in tons of fish, were used until landing records indicated that revision of these estimates was required.

Since 2000, the IATTC has used well volume, in cubic meters (m^3), instead of weight, in metric tons (t), to measure the carrying capacities of the vessels. Since a well can be loaded with different densities of fish, measuring carrying capacity in weight is subjective, as a load of fish packed into a well at a higher density weighs more than a load of fish packed at a lower density. Using volume as a measure of capacity eliminates this problem.

The IATTC staff began collecting capacity data by volume in 1999, but has not yet obtained this information for all vessels. For vessels for which reliable information on well volume is not available, the estimated capacity in metric tons was converted to cubic meters.

Until about 1960, fishing for tunas in the EPO was dominated by pole-and-line vessels operating in coastal regions and in the vicinity of offshore islands and banks. During the late 1950s and early 1960s most of the larger pole-and-line vessels were converted to purse seiners, and by 1961 the EPO fishery was dominated by these vessels. From 1961 to 2008 the number of pole-and-line vessels decreased from 93 to

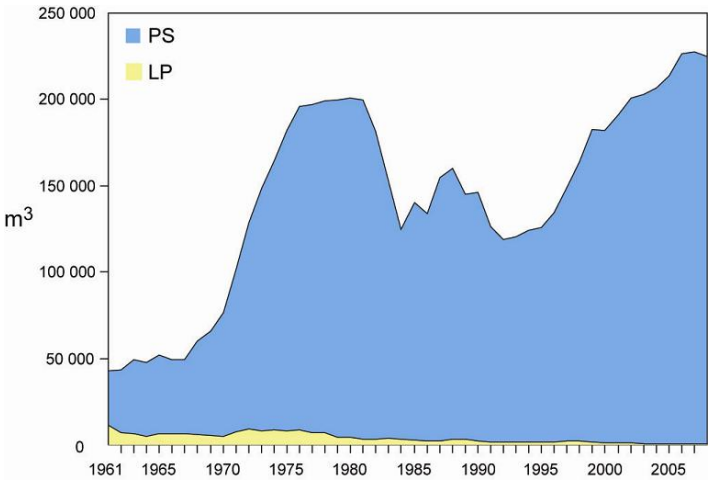

Figure 2. Carrying capacity, in cubic meters of well volume, of the purse-seine and pole-and-line fleets in the EPO, 1961-2008

4, and their total well volume from about 11 thousand to about 380 m^3. During the same period the number of purse-seine vessels increased from 125 to 218, and their total well volume from about 32 thousand to about 225 thousand m^3, an average of about 1,000 m^3 per vessel. An earlier peak in numbers and total well volume of purse seiners occurred from the mid-1970s to the early 1980s, when the number of vessels reached 282 and the total well volume about 195 thousand m^3, an average of about 700 m^3 per vessel (Table A-10; Figure 2).

The catch rates in the EPO were low during 1978-1981, due to concentration of fishing effort on small fish, and the situation was exacerbated by a major El Niño event, which began in mid-1982 and persisted until late 1983 and made the fish less vulnerable to capture. The total well volume of purse-seine and pole-and-line vessels then declined as vessels were deactivated or left the EPO to fish in other areas, primarily the western Pacific Ocean, and in 1984 it reached its lowest level since 1971, about 122 thousand m^3. In early 1990 the U.S. tuna-canning industry adopted a policy of not purchasing tunas caught during trips during which sets on tunas associated with dolphins were made. This caused many U.S.-flag vessels to leave the EPO, with a consequent reduction in the fleet to about 117 thousand m^3 in 1992. With increases in participation of vessels of other nations in the fishery, the total well volume has increased steadily since 1992, and in 2008 was 225 thousand m^3.

The 2007 and preliminary 2008 data for numbers and total well volumes of purse-seine and pole-and-line vessels that fished for tunas in the EPO are shown in Tables A-11a and A-11b. During 2008, the fleet was dominated by vessels operating under the Ecuadorian and Mexican flags, with about 27% and 24%, respectively, of the total well volume; they were followed by Panama (16%), Venezuela (13%), Colombia (7%), Spain (5%), El Salvador, and Nicaragua, (3% each), and Vanuatu (2%).

The cumulative capacity at sea during 2008 is compared to those of the previous five years in Figure 3.

The monthly average, minimum, and maximum total well volumes at sea (VAS), in thousands of cubic meters, of purse-seine and pole-and-line vessels that fished for tunas in the EPO during 1998-2007, and the 2008 values, are shown in Table A-12. The monthly values are averages of the VAS estimated at weekly intervals by the IATTC staff. The fishery was regulated during some or all of the last four months of 1998-

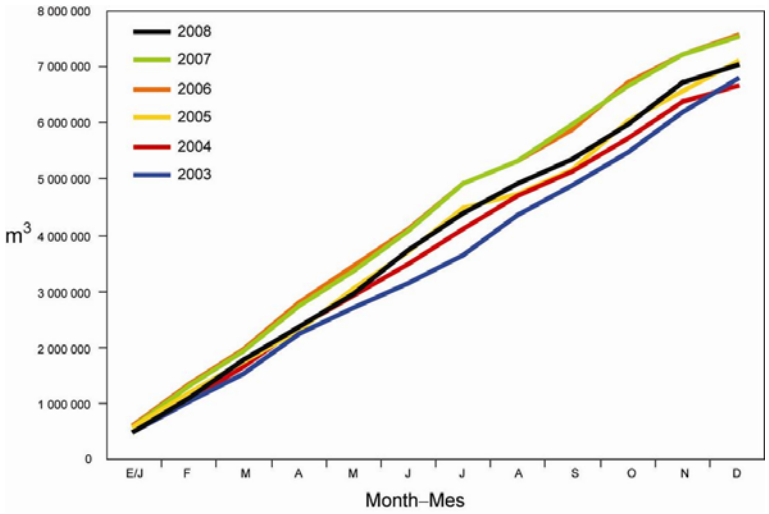

Figure 3. Cumulative capacity of the purse-seine and pole-and-line fleet at sea, by month, 2003-2008

2008, so the VAS values for September-December 2008 are not comparable to the average VAS values for those months of 1998-2007. The average VAS values for 1998-2007 and 2008 were 122 thousand m^3 (61% of total capacity) and 135 thousand m^3 (60% of total capacity), respectively.

3.2. Other fleets of the EPO

Information on other types of vessels that fish for tunas in the EPO is available on the IATTC's Regional Vessel Register, on the IATTC web site. The Register is incomplete for small vessels. In some cases, particularly for large longline vessels, the Register contains information for vessels authorized to fish not only in the EPO, but also in other oceans, and which may not have fished in the EPO during 2008, or ever.

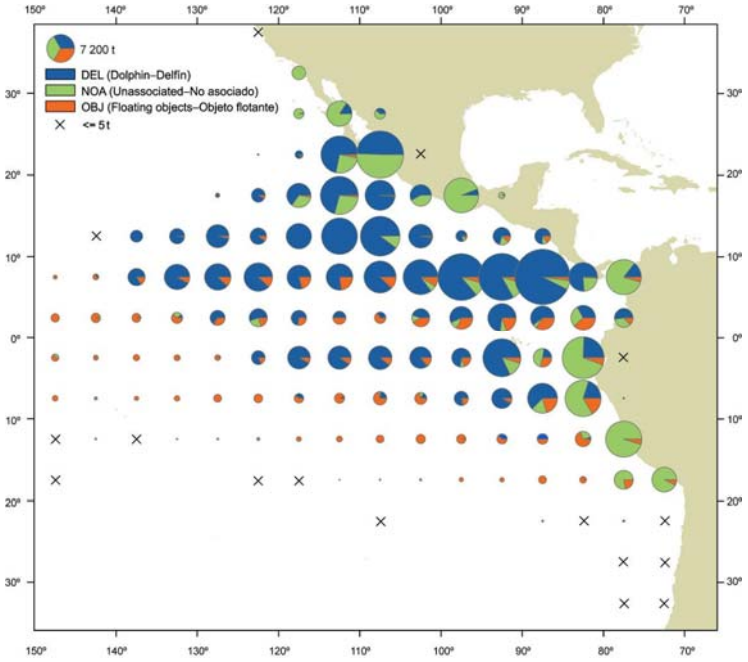

FIGURE A-1a. Average annual distributions of the purse-seine catches of yellowfin, by set type, 1998-2007. The sizes of the circles are proportional to the amounts of yellowfin caught in those 5° by 5° areas.
FIGURA A-1a. Distribución media anual de las capturas cerqueras de aleta amarilla, por tipo de lance, 1998-2007. El tamaño de cada círculo es proporcional a la cantidad de aleta amarilla capturado en la cuadrícula de 5° x 5° correspondiente.

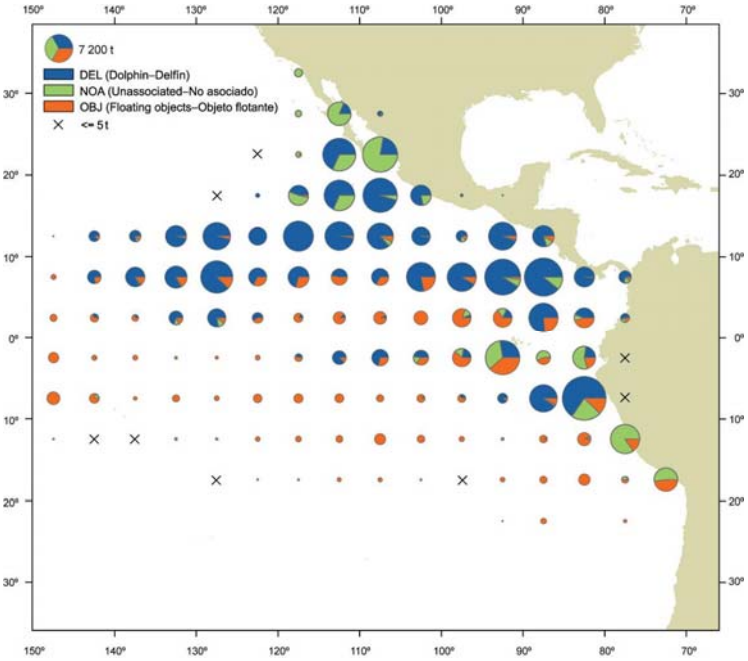

FIGURE A-1b. Annual distributions of the purse-seine catches of yellowfin, by set type, 2008. The sizes of the circles are proportional to the amounts of yellowfin caught in those 5° by 5° areas.
FIGURA A-1b. Distribución anual de las capturas cerqueras de aleta amarilla, por tipo de lance, 2008. El tamaño de cada círculo es proporcional a la cantidad de aleta amarilla capturado en la cuadrícula de 5° x 5° correspondiente.

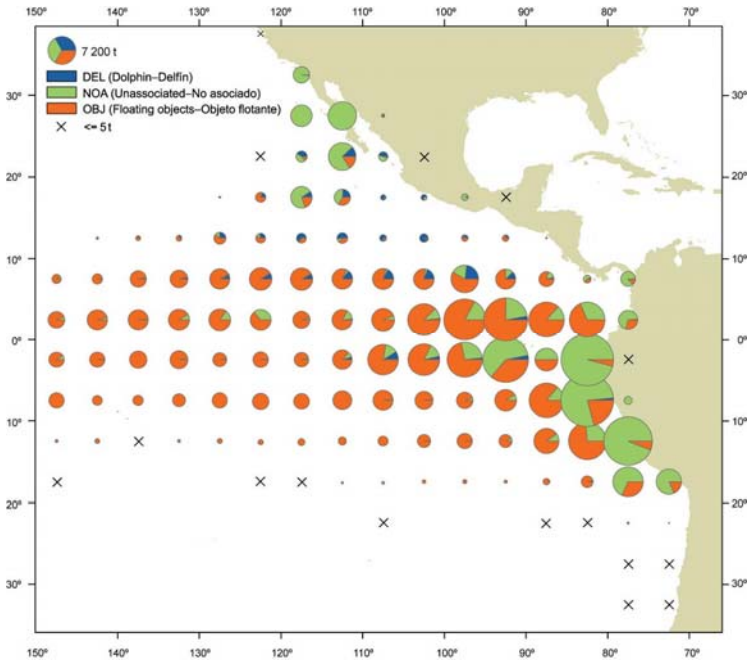

FIGURE A-2a. Average annual distributions of the purse-seine catches of skipjack, by set type, 1998-2007. The sizes of the circles are proportional to the amounts of skipjack caught in those 5° by 5° areas.
FIGURA A-2a. Distribución media anual de las capturas cerqueras de barrilete, por tipo de lance, 1998-2007. El tamaño de cada círculo es proporcional a la cantidad de barrilete capturado en la cuadrícula de 5° x 5° correspondiente.

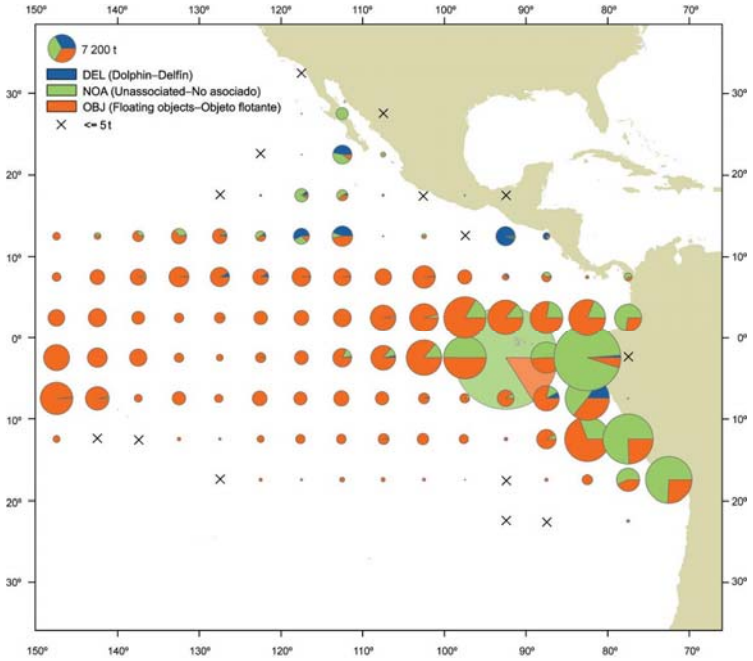

FIGURE A-2b. Annual distributions of the purse-seine catches of skipjack, by set type, 2008. The sizes of the circles are proportional to the amounts of skipjack caught in those 5° by 5° areas.
FIGURA A-2b. Distribución anual de las capturas cerqueras de barrilete, por tipo de lance, 2008. El tamaño de cada círculo es proporcional a la cantidad de barrilete capturado en la cuadrícula de 5° x 5° correspondiente.

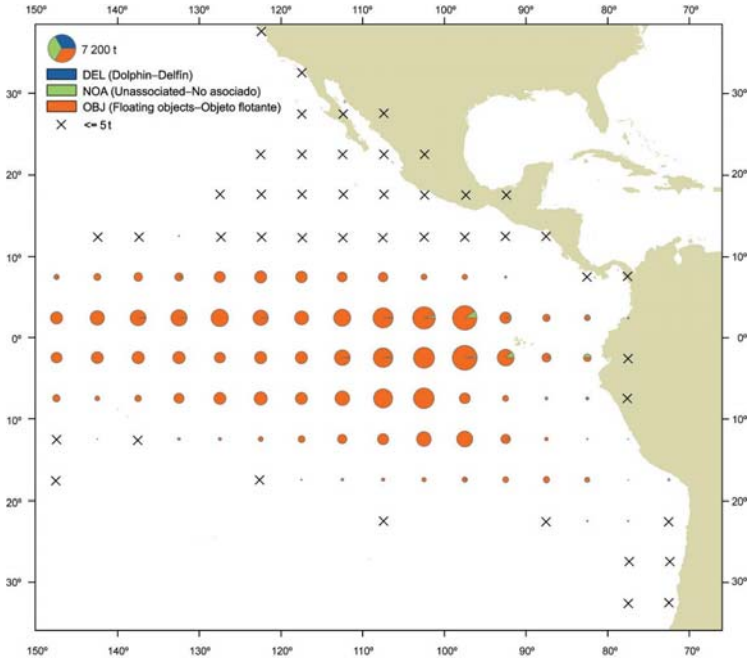

FIGURE A-3a. Average annual distributions of the purse-seine catches of bigeye, by set type, 1998-2007. The sizes of the circles are proportional to the amounts of bigeye caught in those 5° by 5° areas.
FIGURA A-3a. Distribución media anual de las capturas cerqueras de patudo, por tipo de lance, 1998-2007. El tamaño de cada círculo es proporcional a la cantidad de patudo capturado en la cuadrícula de 5° x 5° correspondiente.

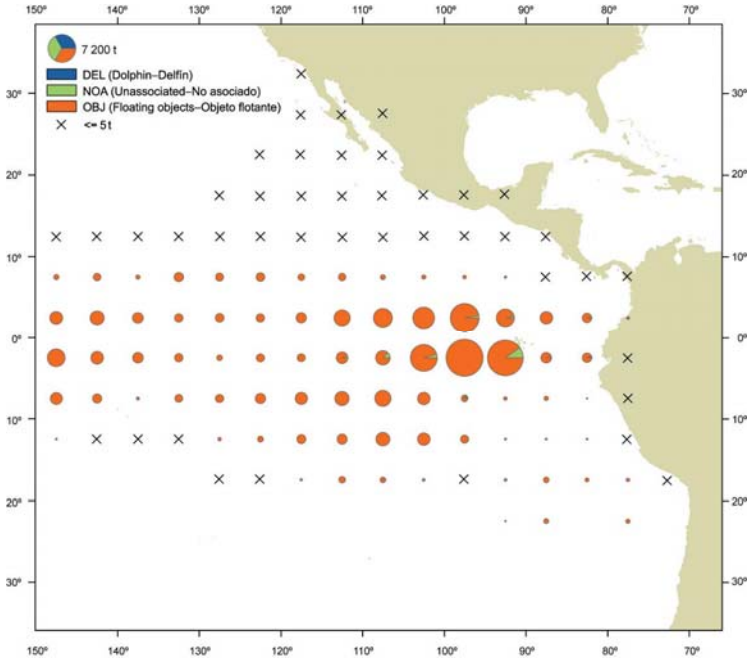

FIGURE A-3b. Annual distributions of the purse-seine catches of bigeye, by set type, 2008. The sizes of the circles are proportional to the amounts of bigeye caught in those 5° by 5° areas.
FIGURA A-3b. Distribución anual de las capturas cerqueras de patudo, por tipo de lance, 2008. El tamaño de cada círculo es proporcional a la cantidad de patudo capturado en la cuadrícula de 5° x 5° correspondiente.

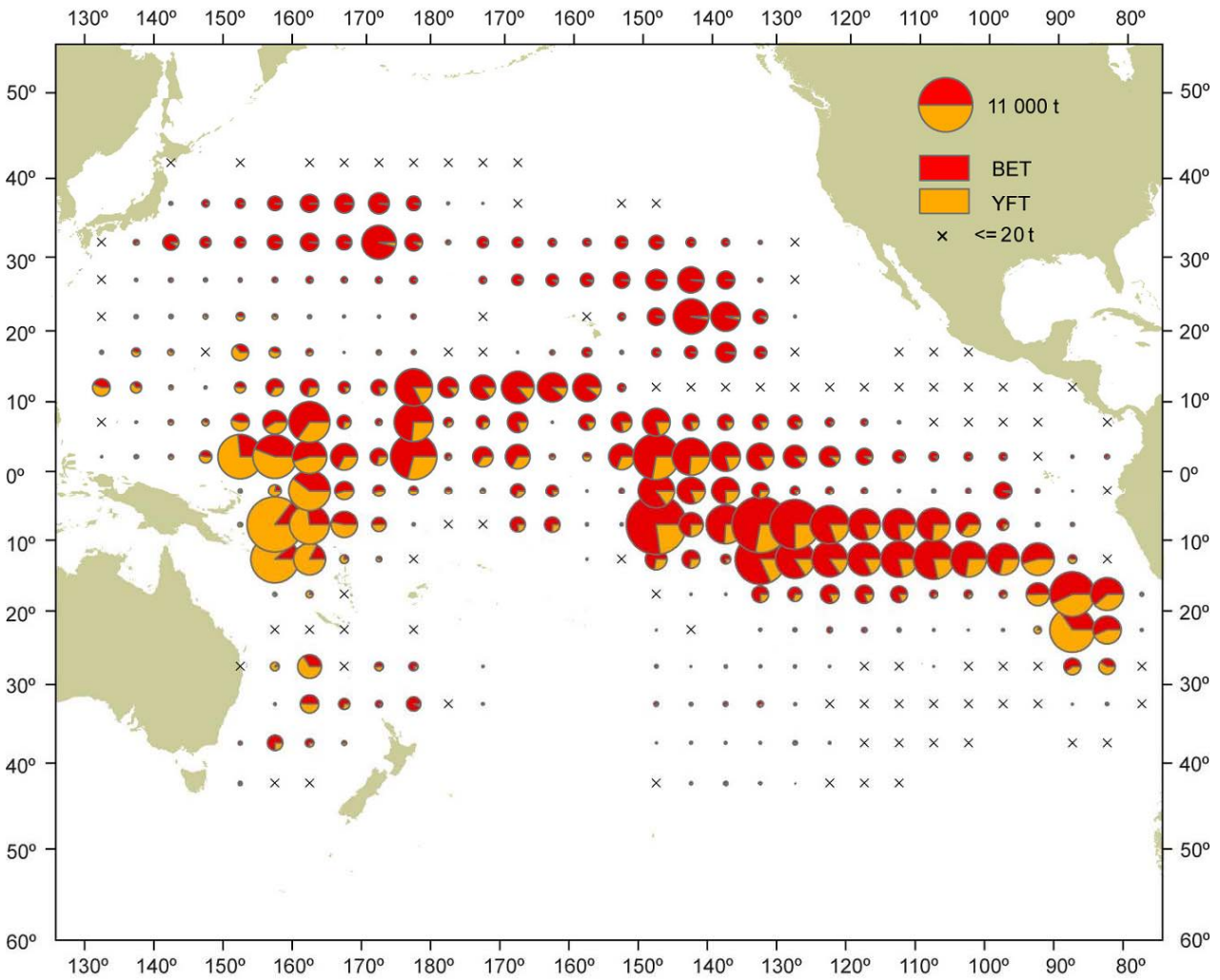

FIGURE A-4. Distributions of the average annual catches of bigeye and yellowfin tunas in the Pacific Ocean, in metric tons, by Chinese Taipei, Japanese and Korean longline vessels, 2003-2007. The sizes of the circles are proportional to the amounts of bigeye and yellowfin caught in those 5° by 5° areas.

FIGURA A-4. Distribución de las capturas anuales medias de atunes patudo y aleta amarilla en el Océano Pacifico, en toneladas métricas, por buques palangreros de Corea, Japón y Taipei Chino 2003-2007. El tamaño de cada círculo es proporcional a la cantidad de patudo y aleta amarilla capturado en la cuadrícula de 5° x 5° correspondiente.

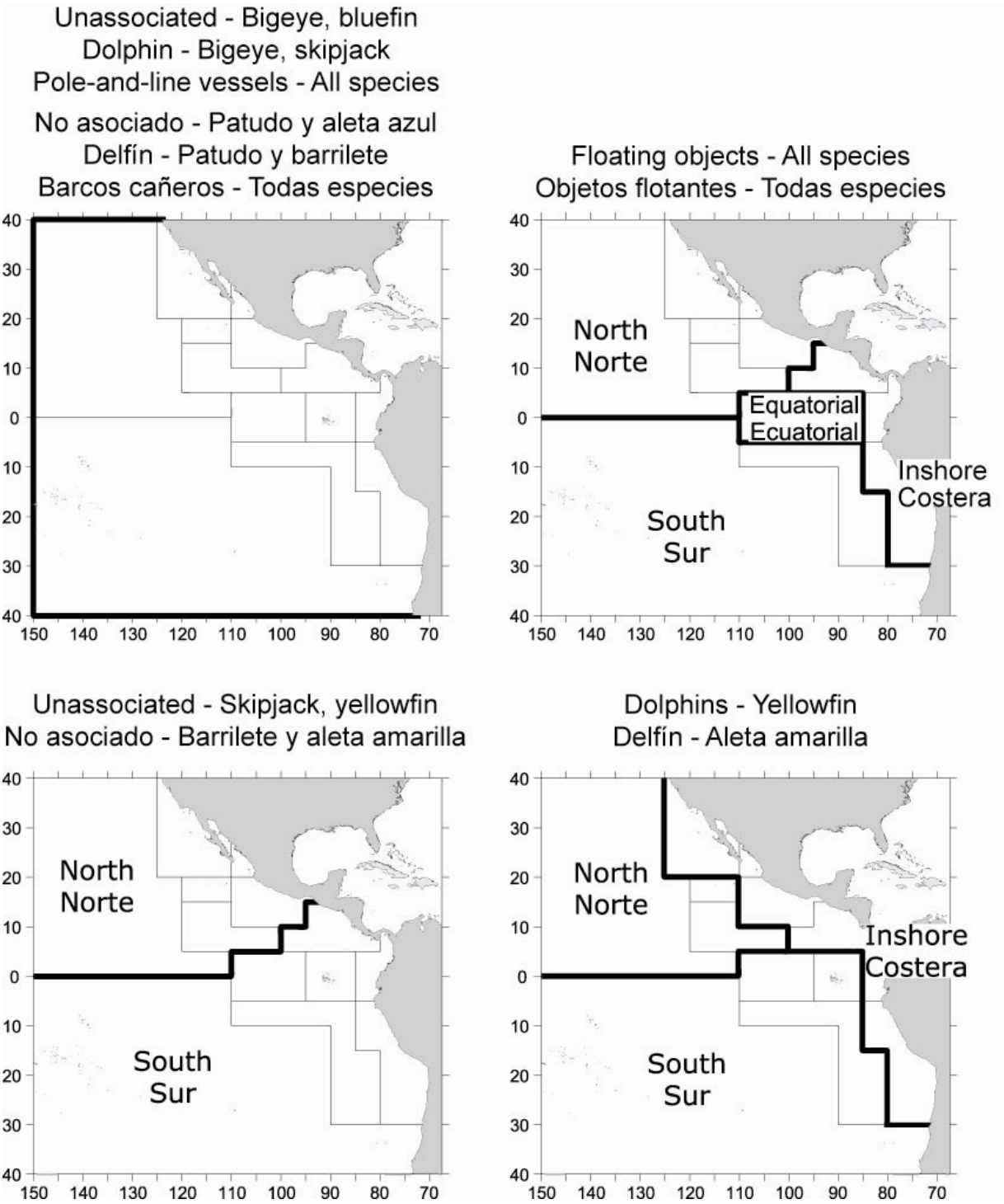

FIGURE A-5. The fisheries defined by the IATTC staff for stock assessment of yellowfin, skipjack, and bigeye in the EPO. The thin lines indicate the boundaries of the 13 length-frequency sampling areas, and the bold lines the boundaries of the fisheries.

FIGURA A-5. Las pesquerías definidas por el personal de la CIAT para la evaluación de las poblaciones de atún aleta amarilla, barrilete, y patudo en el OPO. Las líneas delgadas indican los límites de las 13 zonas de muestreo de frecuencia de tallas, y las líneas gruesas los límites de las pesquerías.

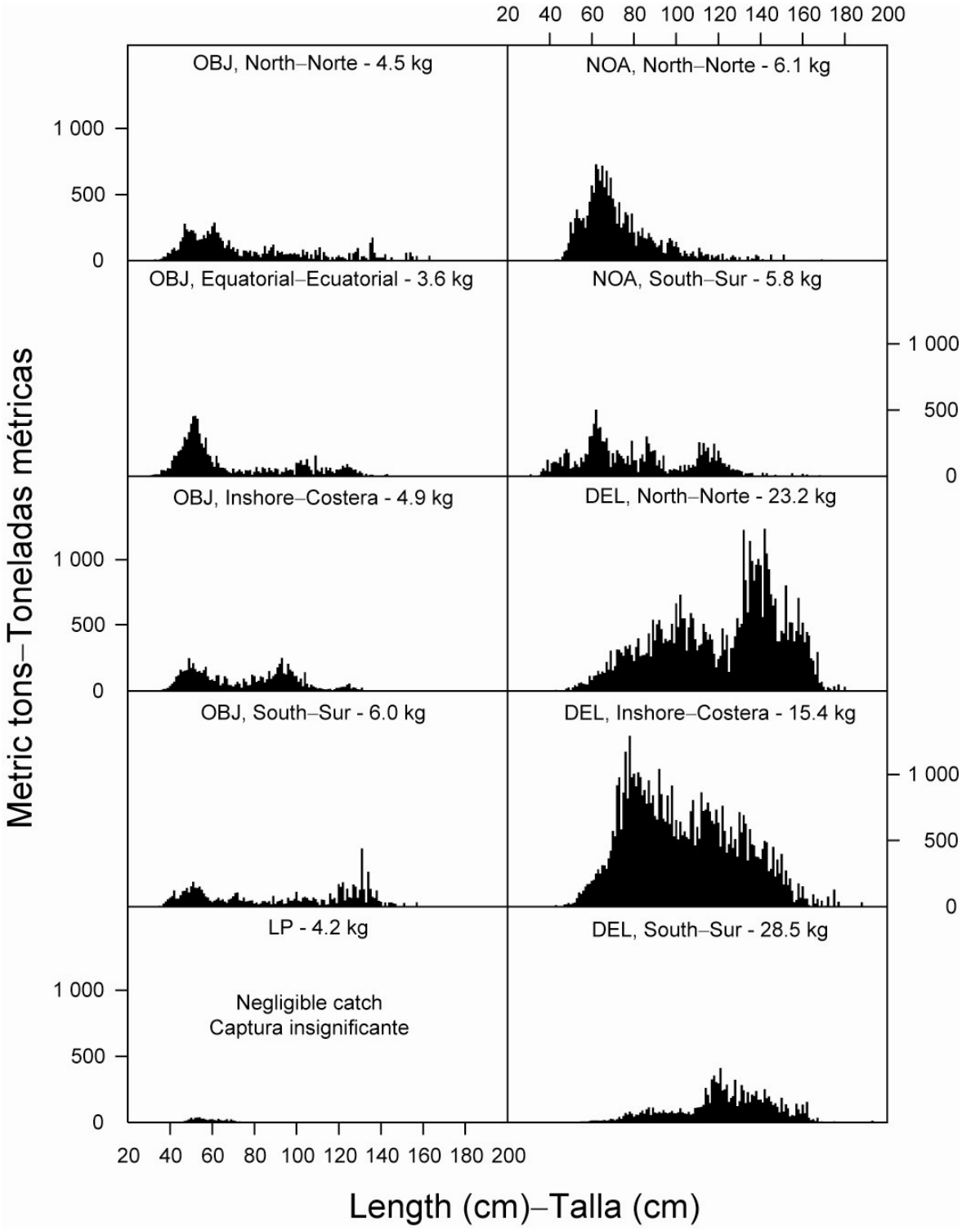

FIGURE A-6a. Estimated size compositions of the yellowfin caught in the EPO during 2008 for each fishery designated in Figure A-5. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-6a. Composición por tallas estimada del aleta amarilla capturado en el OPO durante 2008 en cada pesquería ilustrada en la Figura A-5. En cada recuadro se detalla el peso promedio de los peces en las muestras.

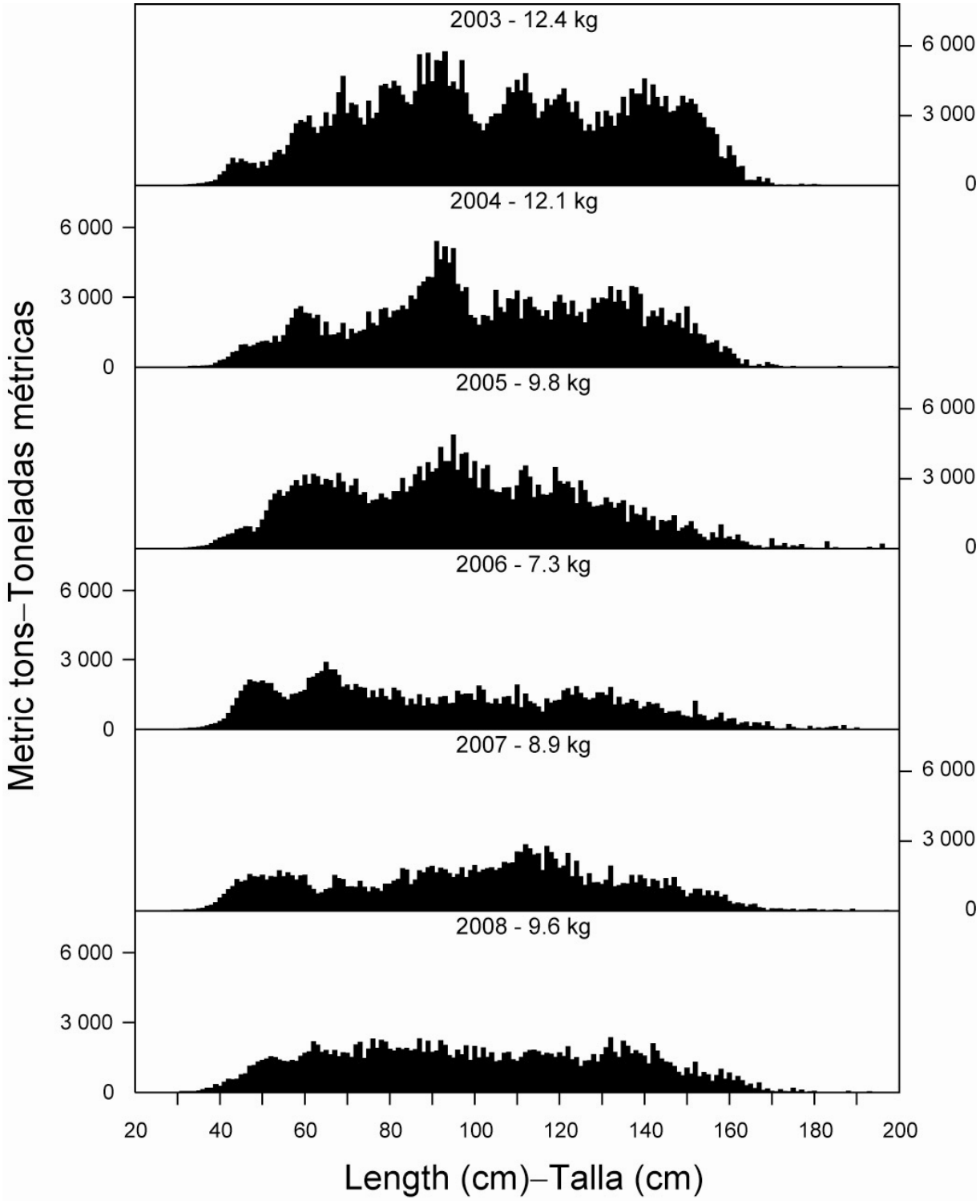

FIGURE A-6b. Estimated size compositions of the yellowfin caught by purse-seine and pole-and-line vessels in the EPO during 2003-2008. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-6b. Composición por tallas estimada del aleta amarilla capturado por buques cerqueros y cañeros en el OPO durante 2003-2008. En cada recuadro se detalla el peso promedio de los peces en las muestras.

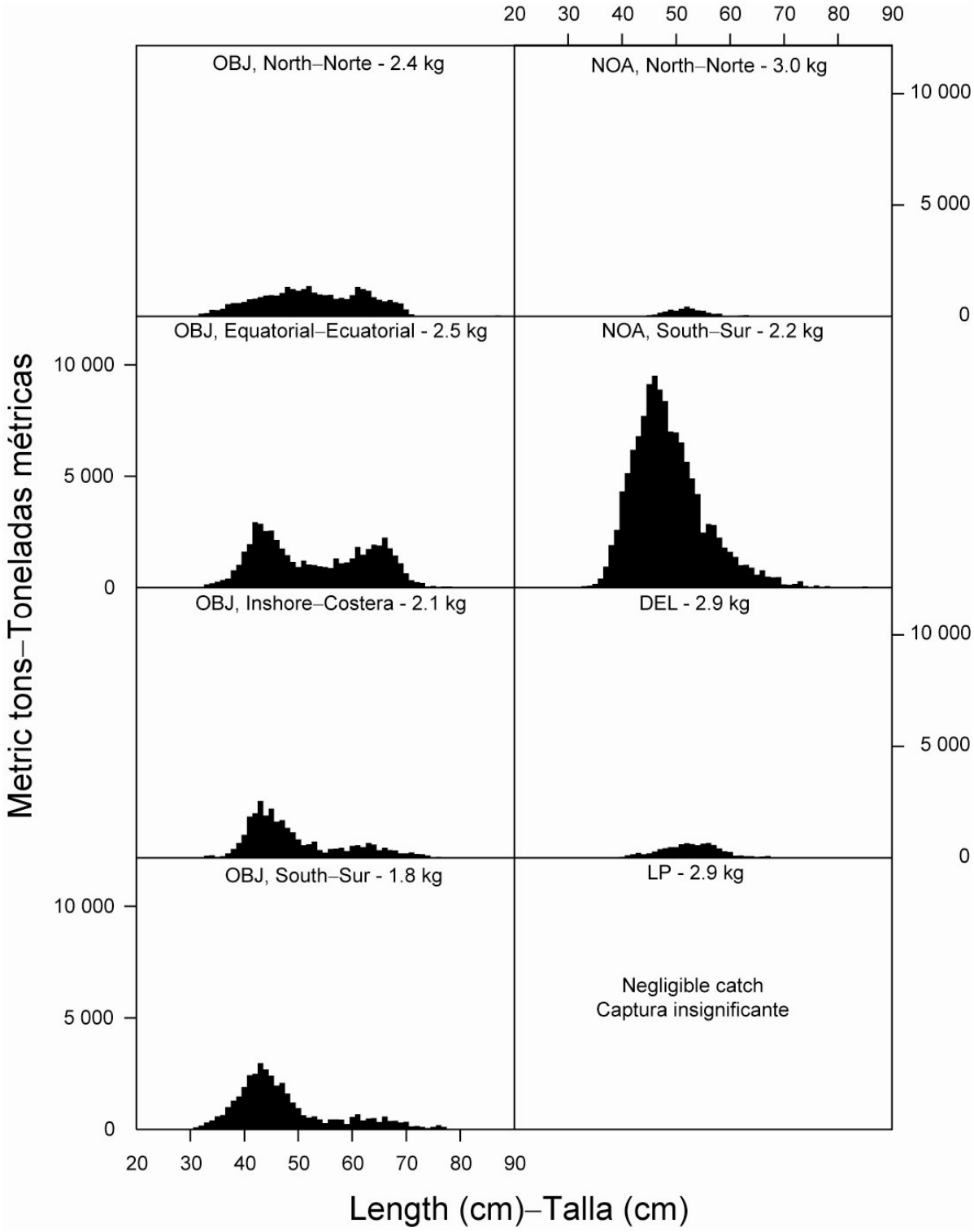

FIGURE A-7a. Estimated size compositions of the skipjack caught in the EPO during 2008 for each fishery designated in Figure A-5. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-7a. Composición por tallas estimada del barrilete capturado en el OPO durante 2008 en cada pesquería ilustrada en la Figura A-5. En cada recuadro se detalla el peso promedio de los peces en las muestras.

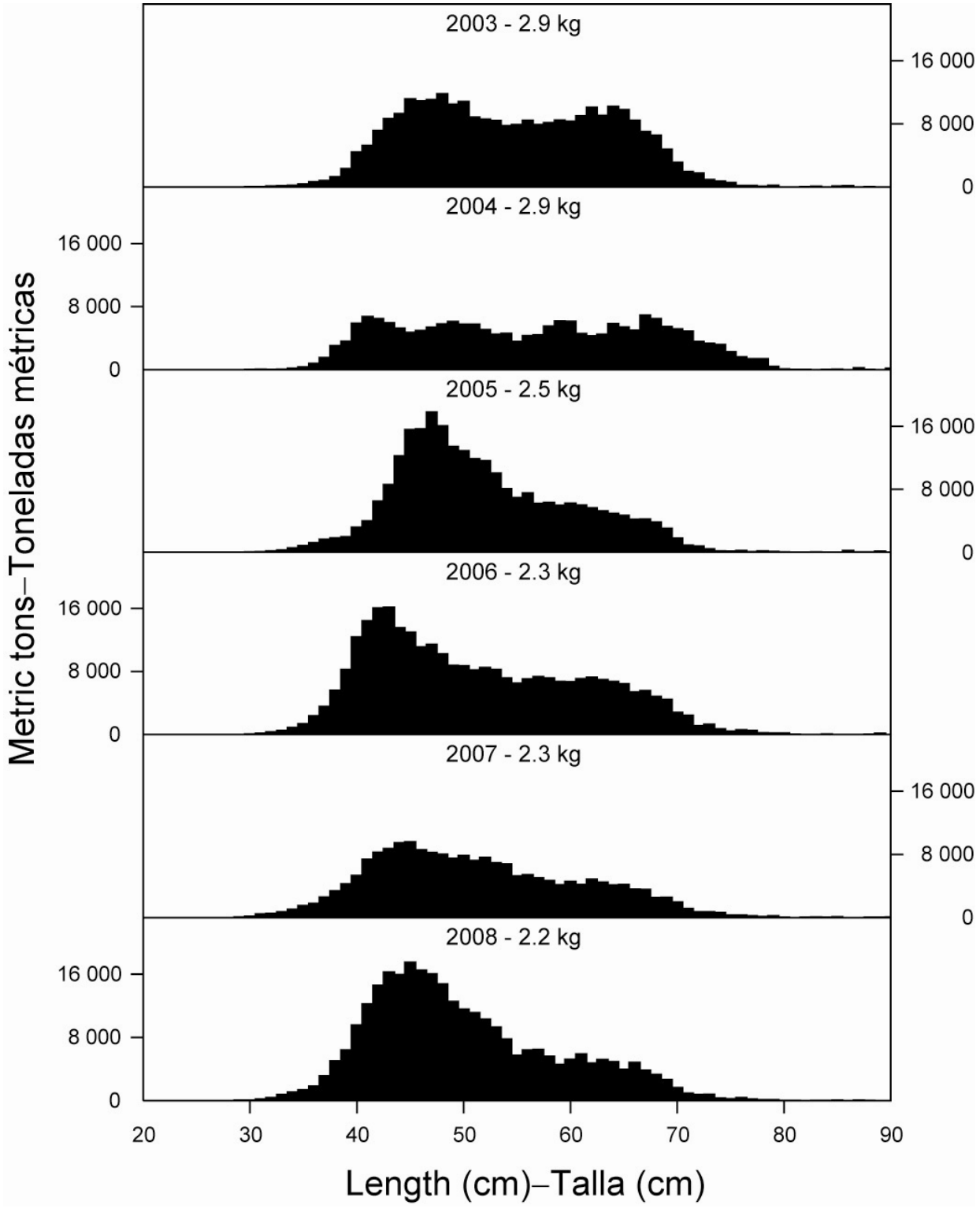

FIGURE A-7b. Estimated size compositions of the skipjack caught by purse-seine and pole-and-line vessels in the EPO during 2003-2008. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-7b. Composición por tallas estimada del barrilete capturado por buques cerqueros y cañeros en el OPO durante 2003-2008. En cada recuadro se detalla el peso promedio de los peces en las muestras.

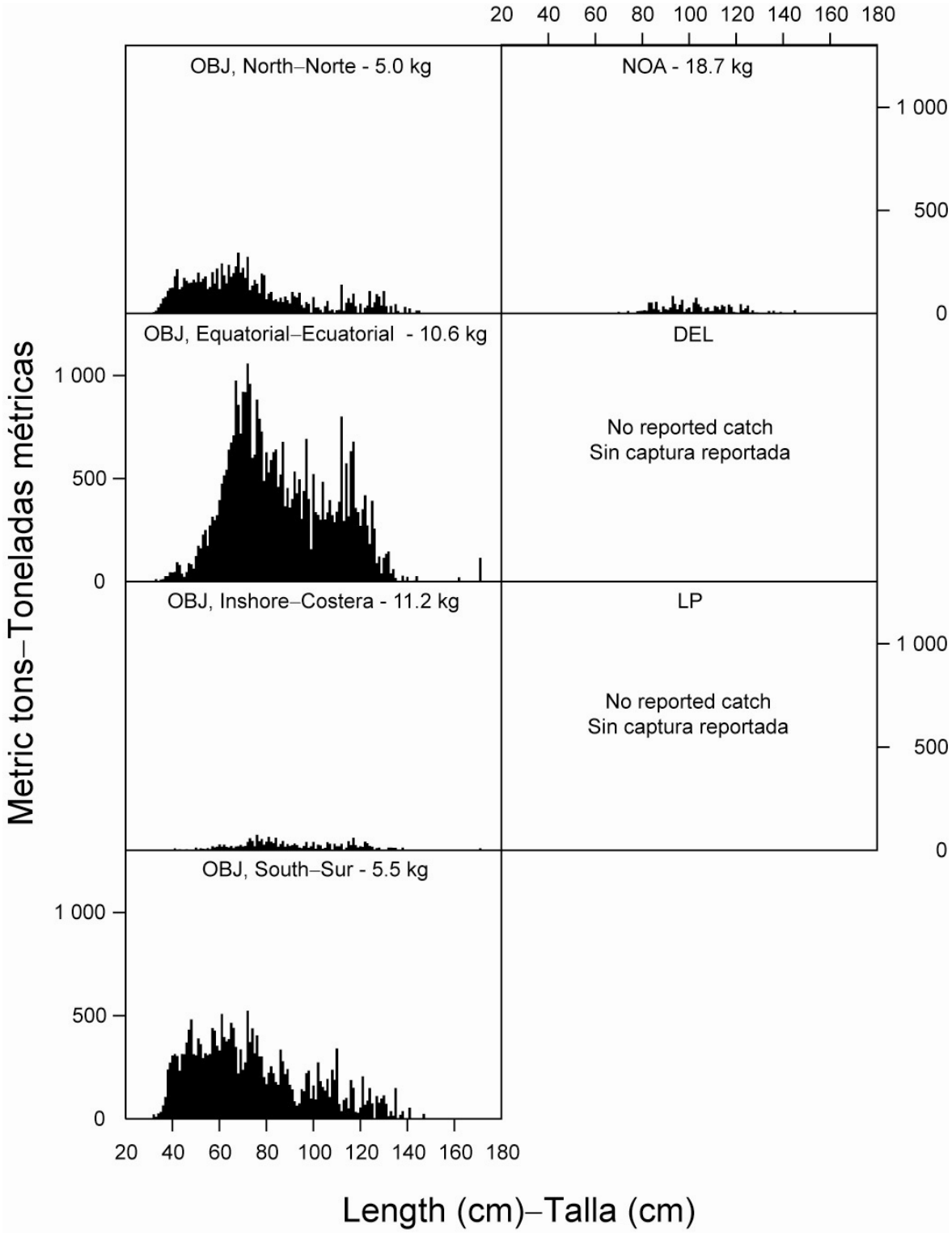

FIGURE A-8a. Estimated size compositions of the bigeye caught in the EPO during 2008 for each fishery designated in Figure A-5. The average weights of the fish in the samples are given at the tops of the panels.

FIGURA A-8a. Composición por tallas estimada del patudo capturado e en el OPO durante 2008 en cada pesquería ilustrada en la Figura A-5. En cada recuadro se detalla el peso promedio de los peces en las muestras.

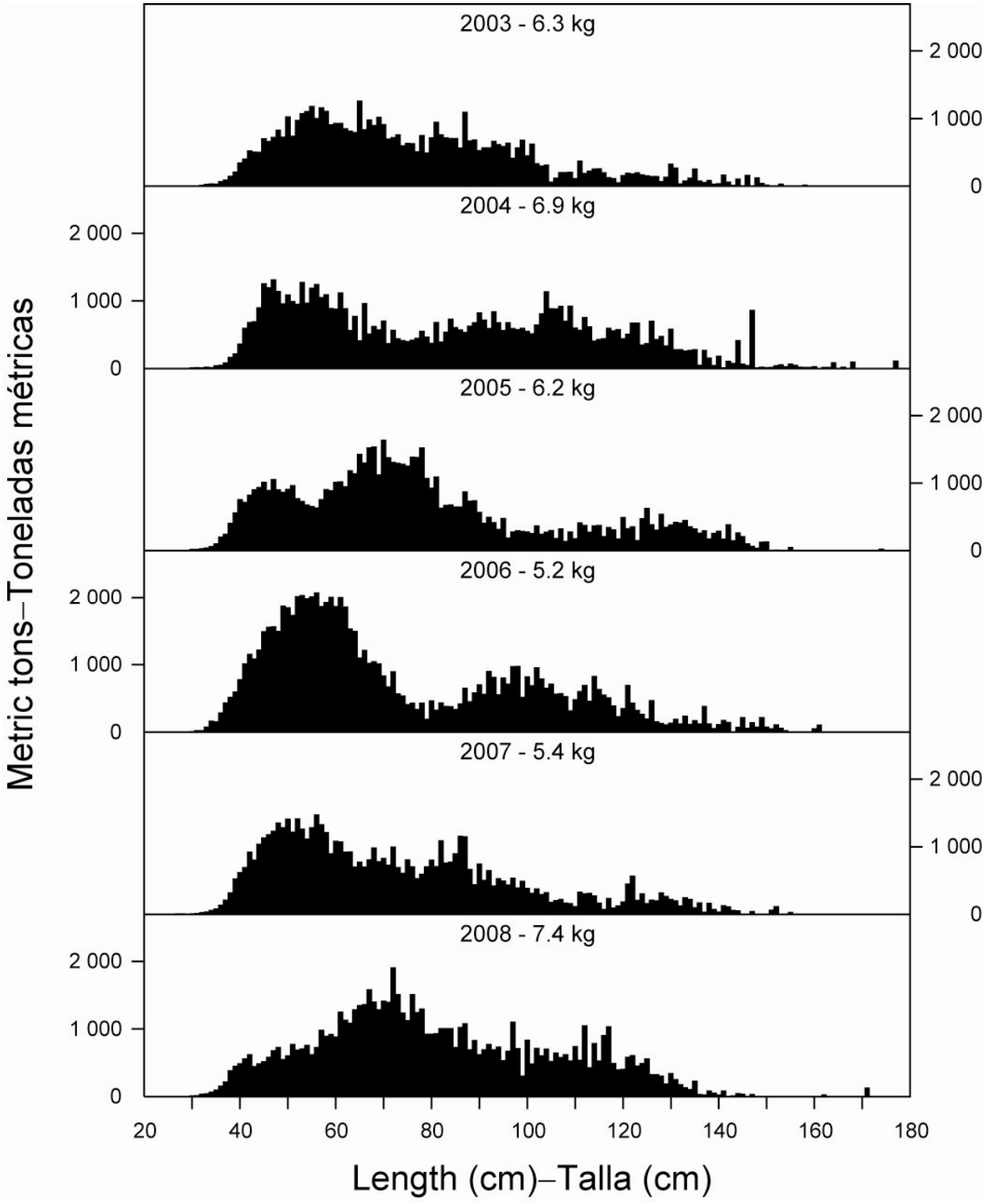

FIGURE A-8b. Estimated size compositions of the bigeye caught by purse-seine vessels in the EPO during 2003-2008. The average weights of the fish in the samples are given at the tops of the panels.
FIGURA A-8b. Composición por tallas estimada del patudo capturado por buques cerqueros en el OPO durante 2003-2008. En cada recuadro se detalla el peso promedio de los peces en las muestras.

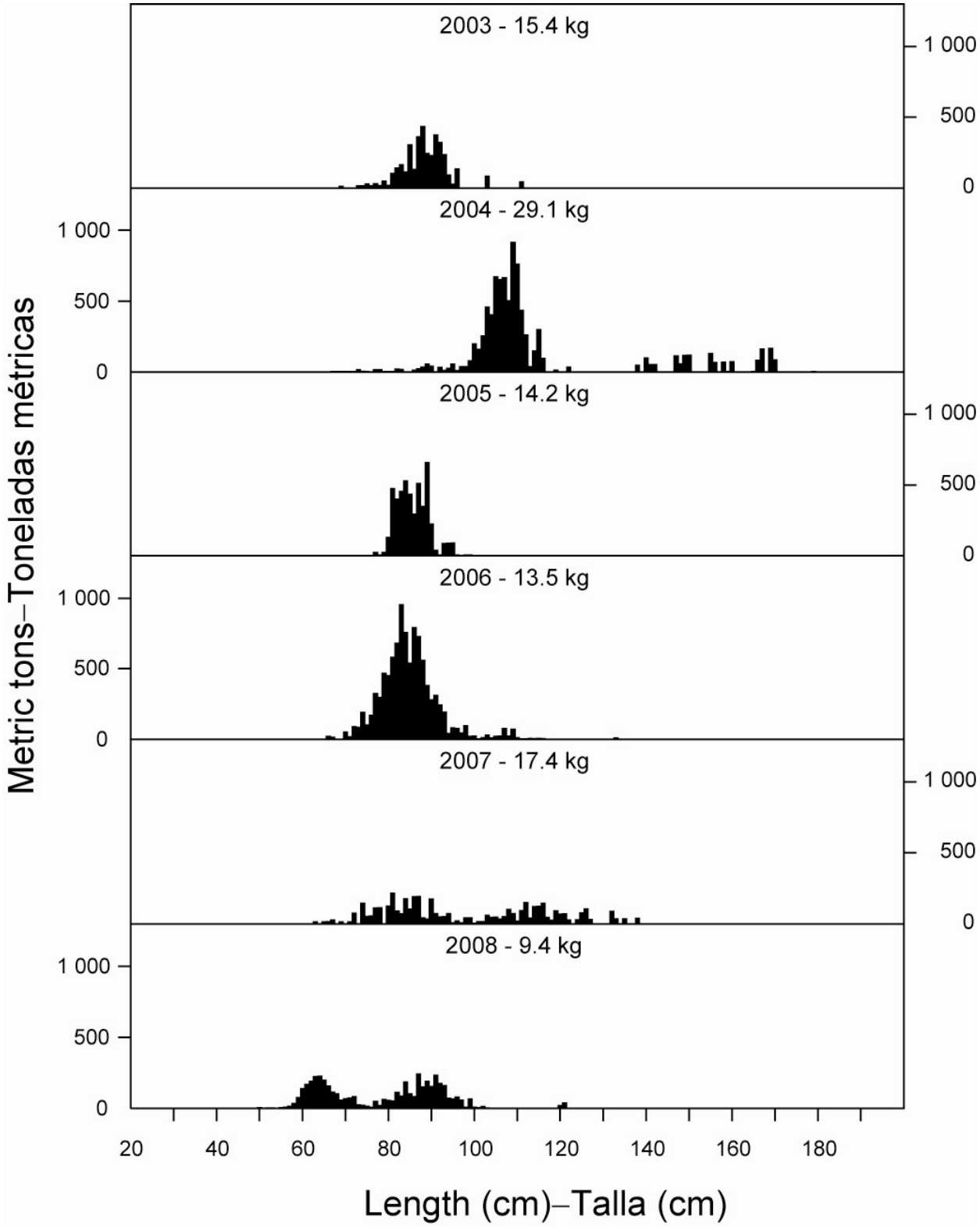

FIGURE A-9. Estimated catches of Pacific bluefin by purse-seine and recreational gear in the EPO during 2003-2008. The values at the tops of the panels are the average weights.
FIGURA A-9. Captura estimada de aleta azul del Pacífico con arte de cerco y deportiva en el OPO durante 2003-2008. El valor en cada recuadro representa el peso promedio.

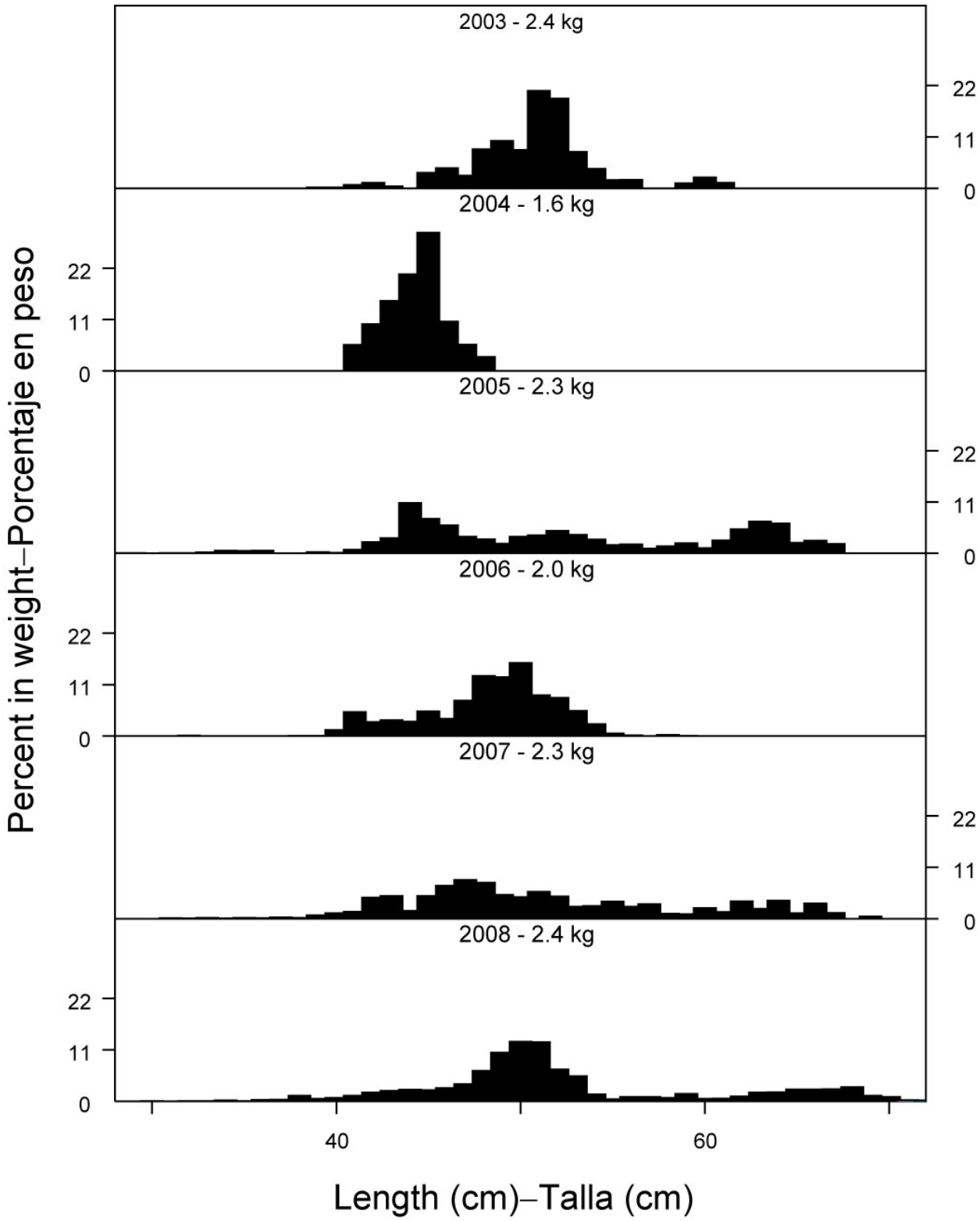

FIGURE A-10. Estimated size compositions of the catches of black skipjack by purse-seine vessels in the EPO during 2003-2008. The values at the tops of the panels are the average weights.
FIGURA A-10. Composición por tallas estimada del barrilete negro capturado por buques cerqueros en el OPO durante 2003-2008. El valor en cada recuadro representa el peso promedio.

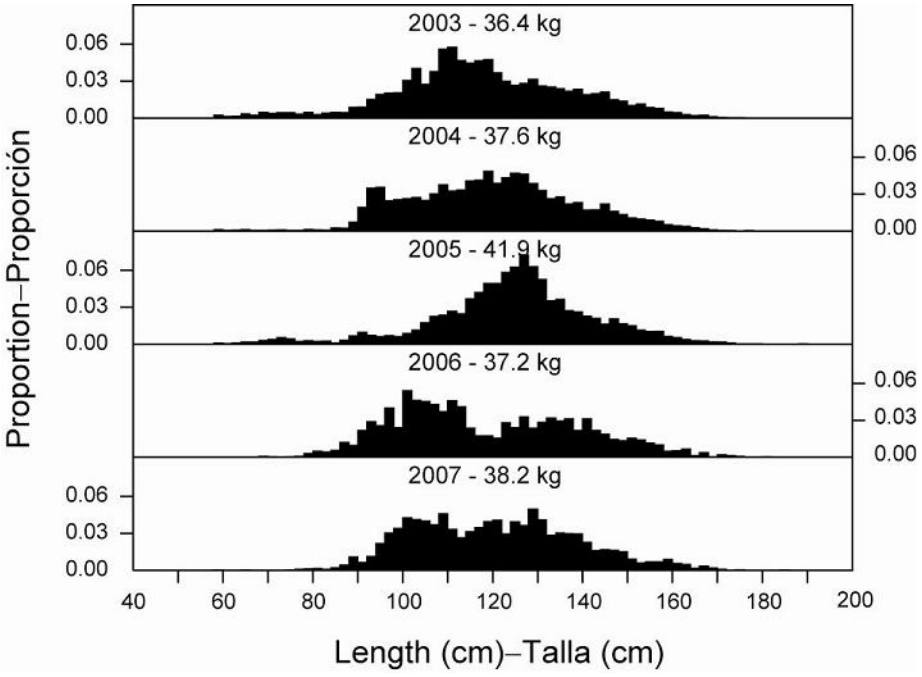

FIGURE A-11. Estimated size compositions of the catches of yellowfin tuna by the Japanese longline fishery in the EPO, 2003-2007.
FIGURA A-11. Composición por tallas estimada de las capturas de atún aleta amarilla por la pesquería palangrera japonesa en el OPO, 2003-2007.

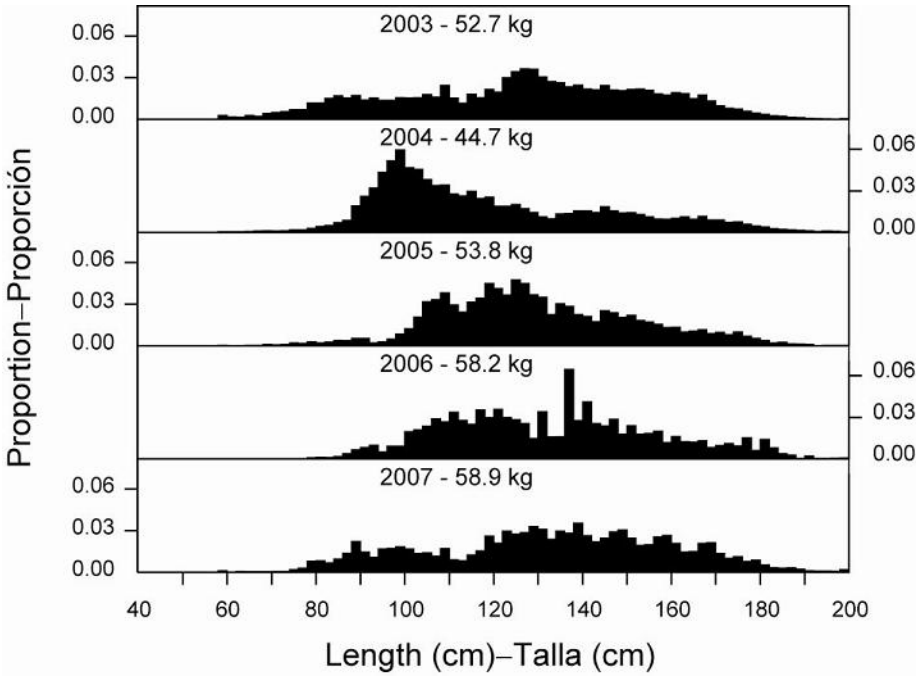

FIGURE A-12. Estimated size compositions of the catches of bigeye tuna by the Japanese longline fishery in the EPO, 2003-2007.
FIGURA A-12. Composición por tallas estimada de las capturas de atún patudo por la pesquería palangrera japonesa en el OPO, 2003-2007.

TABLE A-1. Annual catches of yellowfin, skipjack, and bigeye, by all types of gear combined, in the Pacific Ocean, 1979-2008. The EPO totals for 1993-2008 include discards from purse-seine vessels with carrying capacities greater than 363 t.

TABLA A-1. Capturas anuales de aleta amarilla, barrilete, y patudo, por todas las artes combinadas, en el Océano Pacífico, 1979-2008. Los totales del OPO de 1993-2008 incluyen los descartes de buques cerqueros de más de 363 t de capacidad de acarreo.

	YFT			SKJ			BET			Total		
	EPO	**WCPO**	**Total**	**EPO**	**WCPO**	**Total**	**EPO**	**WCPO**	**Total**	**EPO**	**WCPO**	**Total**
1979	187,124	194,395	381,519	141,503	413,597	555,100	67,533	66,254	133,787	396,160	674,246	1,070,406
1980	158,862	213,090	371,952	138,101	458,623	596,724	86,403	65,087	151,490	383,366	736,800	1,120,166
1981	178,509	225,741	404,250	126,000	435,757	561,757	68,343	53,236	121,579	372,852	714,734	1,087,586
1982	127,532	220,957	348,489	104,669	485,948	590,617	60,350	59,181	119,531	292,551	766,086	1,058,637
1983	99,680	257,066	356,746	61,976	679,103	741,079	64,694	59,809	124,503	226,350	995,978	1,222,328
1984	149,465	256,142	405,607	63,611	755,983	819,594	55,268	64,596	119,864	268,344	1,076,721	1,345,065
1985	225,940	259,424	485,364	52,001	601,112	653,113	72,397	68,589	140,986	350,338	929,125	1,279,463
1986	286,071	250,606	536,677	67,745	748,572	816,317	105,185	63,627	168,812	459,001	1,062,805	1,521,806
1987	286,163	303,522	589,685	66,467	681,282	747,749	101,346	79,186	180,532	453,976	1,063,990	1,517,966
1988	296,430	262,948	559,378	92,126	839,113	931,239	74,313	68,358	142,671	462,869	1,170,419	1,633,288
1989	299,436	313,657	613,093	98,922	814,857	913,779	72,993	76,997	149,990	471,351	1,205,511	1,676,862
1990	301,522	353,442	654,964	77,107	880,186	957,293	104,850	90,356	195,206	483,479	1,323,984	1,807,463
1991	265,969	394,567	660,536	65,890	1,106,567	1,172,457	109,120	73,474	182,594	440,979	1,574,608	2,015,587
1992	252,514	400,879	653,393	87,294	1,007,389	1,094,683	92,000	91,032	183,032	431,808	1,499,300	1,931,108
1993	256,226	386,565	642,791	100,601	915,467	1,016,068	82,838	79,665	162,503	439,665	1,381,697	1,821,362
1994	248,078	395,543	643,621	84,695	1,018,470	1,103,165	109,336	89,662	198,998	442,109	1,503,675	1,945,784
1995	244,640	380,555	625,195	150,661	1,050,872	1,201,533	108,209	83,057	191,266	503,510	1,514,484	2,017,994
1996	266,928	317,180	584,108	132,342	1,022,072	1,154,414	114,705	84,107	198,812	513,975	1,423,359	1,937,334
1997	277,572	436,882	714,454	188,285	964,679	1,152,964	122,274	113,444	235,718	588,131	1,515,005	2,103,136
1998	280,606	456,651	737,257	165,490	1,309,168	1,474,658	93,954	113,293	207,247	540,050	1,879,112	2,419,162
1999	304,636	398,646	703,282	291,249	1,175,078	1,466,327	93,078	115,721	208,799	688,963	1,689,445	2,378,408
2000	288,834	424,097	712,931	229,181	1,237,701	1,466,882	147,915	113,836	261,751	665,930	1,775,634	2,441,564
2001	423,774	420,955	844,729	158,072	1,136,413	1,294,485	131,184	105,238	236,422	713,030	1,662,606	2,375,636
2002	443,677	403,923	847,600	166,804	1,312,532	1,479,336	132,825	120,222	253,047	743,306	1,836,677	2,579,983
2003	413,846	437,147	850,993	301,030	1,314,787	1,615,817	116,297	110,260	226,557	831,173	1,862,194	2,693,367
2004	293,897	370,349	664,246	218,193	1,403,856	1,622,049	113,018	146,069	259,087	625,108	1,920,274	2,545,382
2005	286,097	433,927	720,024	282,318	1,526,860	1,809,178	113,234	129,536	242,770	681,649	2,090,323	2,771,972
2006	178,844	437,199	616,043	311,456	1,590,656	1,902,112	120,330	134,369	254,699	610,630	2,162,224	2,772,854
2007	182,292	432,750	615,042	216,619	1,717,301	1,933,920	95,062	137,927	232,989	493,973	2,287,978	2,781,951
2008	187,797	*	187,797	305,524	*	305,524	97,330	*	97,330	590,651	*	590,651

TABLE A-2a. Estimated retained catches (Ret.), by gear type, and estimated discards (Dis.), by purse-seine vessels with carrying capacities greater than 363 t only, of tunas and bonitos, in metric tons, in the EPO, 1979-2008 The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimate and are preliminary. The data for 2006-2008 are preliminary.
TABLA A-2a. Estimaciones de las capturas retenidas (Ret.), por arte de pesca, y de los descartes (Dis.), por buques cerqueros de más de 363 t de capacidad de acarreo únicamente, de atunes y bonitos, en toneladas métricas, en el OPO, 1979-2008. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares. Los datos de 2006-2008 son preliminares.

	Yellowfin—Aleta amarilla						Skipjack—Barrilete						Bigeye—Patudo					
	PS		LP	LL	OTR + NK	Total	PS		LP	LL	OTR + NK	Total	PS		LP	LL	OTR + NK	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1979	170,650	-	4,789	11,473	212	187,124	133,695	-	6,346	33	1,429	141,503	12,097	-	-	55,435	1	67,533
1980	143,042	-	1,481	13,477	862	158,862	130,912	-	5,225	26	1,938	138,101	21,938	-	-	64,335	130	86,403
1981	168,234	-	1,477	7,999	799	178,509	119,165	-	5,906	20	909	126,000	14,921	-	-	53,416	6	68,343
1982	114,755	-	1,538	10,961	278	127,532	100,499	-	3,760	28	382	104,669	6,939	-	42	53,365	4	60,350
1983	83,929	-	4,007	10,895	849	99,680	56,851	-	4,387	28	710	61,976	4,575	-	39	60,043	37	64,694
1984	135,785	-	2,991	10,345	344	149,465	59,859	-	2,884	32	836	63,611	8,861	-	2	46,394	11	55,268
1985	211,459	-	1,070	13,198	213	225,940	50,829	-	946	44	182	52,001	6,056	-	2	66,325	14	72,397
1986	260,512	-	2,537	22,808	214	286,071	65,634	-	1,921	58	132	67,745	2,686	-	-	102,425	74	105,185
1987	262,008	-	5,107	18,911	137	286,163	64,019	-	2,233	37	178	66,467	1,177	-	-	100,121	48	101,346
1988	277,293	-	3,723	14,660	754	296,430	87,113	-	4,325	26	662	92,126	1,535	-	5	72,758	15	74,313
1989	277,996	-	4,145	17,032	263	299,436	94,934	-	2,940	28	1,020	98,922	2,030	-	-	70,963	0	72,993
1990	263,253	-	2,676	34,633	960	301,522	74,369	-	823	41	1,874	77,107	5,921	-	-	98,871	58	104,850
1991	231,257	-	2,856	30,899	957	265,969	62,228	-	1,717	36	1,909	65,890	4,870	-	31	104,195	24	109,120
1992	228,121	-	3,789	18,646	1,958	252,514	84,283	-	1,957	24	1,030	87,294	7,179	-	-	84,808	13	92,000
1993	219,492	4,741	4,951	24,009	3,033	256,226	83,830	10,682	3,772	61	2,256	100,601	9,657	648	-	72,498	35	82,838
1994	208,408	4,532	3,625	30,026	1,487	248,078	70,126	10,526	3,240	73	730	84,695	34,899	2,271	-	71,360	806	109,336
1995	215,434	5,275	1,268	20,596	2,067	244,640	127,047	16,373	5,253	77	1,911	150,661	45,321	3,251	-	58,269	1,368	108,209
1996	238,607	6,312	3,762	16,608	1,639	266,928	103,973	24,503	2,555	52	1,259	132,342	61,311	5,689	-	46,958	747	114,705
1997	244,878	5,516	4,418	22,163	597	277,572	153,456	31,338	3,260	135	96	188,285	64,272	5,402	-	52,580	20	122,274
1998	253,959	4,698	5,085	15,336	1,528	280,606	140,631	22,644	1,684	294	237	165,490	44,129	2,822	-	46,375	628	93,954
1999	281,920	6,547	1,783	11,682	2,704	304,636	261,565	26,046	2,044	201	1,393	291,249	51,158	4,932	-	36,450	538	93,078
2000	255,231	6,207	2,431	23,855	1,110	288,834	204,307	24,508	231	68	67	229,181	94,640	5,417	-	47,605	253	147,915
2001	382,702	7,028	3,916	29,608	520	423,774	143,561	12,815	448	1,214	34	158,072	61,156	1,254	-	68,755	19	131,184
2002	412,507	4,140	950	25,531	549	443,677	153,303	12,506	616	261	118	166,804	57,440	949	-	74,424	12	132,825
2003	381,107	5,950	470	25,174	1,145	413,846	274,529	22,453	638	634	2,776	301,030	54,174	2,326	-	59,776	21	116,297
2004	269,597	3,009	1,884	18,779	628	293,897	198,664	17,182	528	713	1,106	218,193	67,592	1,749	-	43,483	194	113,018
2005	267,599	2,929	1,821	11,895	1,853	286,097	261,780	17,228	1,300	231	1,779	282,318	69,826	1,952	-	41,432	24	113,234
2006	166,330	1,665	686	8,706	1,457	178,844	297,408	12,403	435	224	986	311,456	83,978	2,385	-	33,927	40	120,330
2007	170,264	1,946	894	7,922	1,266	182,292	208,290	7,159	276	107	787	216,619	63,074	1,039	-	30,905	44	95,062
2008	185,846	965	812	2	172	187,797	295,530	9,217	499	*	278	305,524	75,653	2,372		19,305	*	97,330

TABLE A-2a. (continued)
TABLA A-2a. (continuación)

	Pacific bluefin—Aleta azul del Pacífico						Albacore—Albacora						Black skipjack—Barrilete negro					
	PS		LP	LL	OTR + NK	Total	PS		LP	LL	OTR + NK	Total	PS		LP	LL	OTR + NK	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1979	6,102	-	5	6	26	6,139	148	-	179	5,583	5,043	10,953	1,334	-	30	-	-	1,364
1980	2,909	-	-	-	31	2,940	194	-	407	5,319	5,649	11,569	3,653	-	27	-	-	3,680
1981	1,085	-	-	4	7	1,096	99	-	608	7,275	12,301	20,283	1,908	-	3	-	-	1,911
1982	3,145	-	-	7	6	3,158	355	-	198	8,407	3,562	12,522	1,338	-	-	-	-	1,338
1983	836	-	-	2	37	875	7	-	449	7,433	7,840	15,729	1,222	-	0	-	13	1,235
1984	839	-	0	3	51	893	3910	-	1441	6,712	9,794	21,857	662	-	-	-	3	665
1985	3,996	-	-	1	77	4,074	42	-	877	7,268	6,654	14,841	288	-	0	-	7	295
1986	5,040	-	-	1	64	5,105	47	-	86	6,450	4,701	11,284	569	-	-	-	18	587
1987	980	-	-	3	89	1,072	1	-	320	9,994	2,662	12,977	571	-	-	-	2	573
1988	1,379	-	-	2	52	1,433	17	-	271	9,934	5,549	15,771	956	-		-	311	1,267
1989	1,103	-	5	4	91	1,203	1	-	21	6,784	2,695	9,501	801	-	0	-	-	801
1990	1,430	-	61	12	101	1,604	39	-	170	6,536	4,105	10,850	787	-	-	-	4	791
1991	419	-	-	5	55	479	-	-	834	7,893	2,754	11,481	421	-	-	-	25	446
1992	1,928	-	-	21	146	2,095	-	-	255	17,080	5,740	23,075	105	-	-	3	-	108
1993	580	-	-	11	325	916	-	-	1	11,194	4,410	15,605	104	4,137	-	31	-	4,272
1994	969	-	-	12	110	1,091	-	-	85	10,390	10,143	20,618	188	861	-	40	-	1,089
1995	629	-	-	25	299	953	-	-	465	6,185	7,425	14,075	203	1,448	-	-	-	1,651
1996	8,223	-	-	19	85	8,327	11	-	72	7,631	8,398	16,112	704	2,304	-	12	-	3,020
1997	2,607	3	2	14	244	2,870	1	-	59	9,678	7,541	17,279	100	2,512	-	11	-	2,623
1998	1,772	-	0	94	526	2,392	42	-	81	12,635	13,155	25,913	489	1,876	39	-	-	2,404
1999	2,553	54	5	152	564	3,328	47	-	227	11,633	14,557	26,464	171	3,412	-	-	-	3,583
2000	3,712	0	61	46	378	4,197	71	-	86	9,663	13,455	23,275	293	1,995	-	-	-	2,288
2001	1,155	3	1	148	401	1,708	3	-	157	19,410	13,766	33,336	2,258	1,019	-	-	-	3,277
2002	1,758	6	3	71	652	2,490	31	-	381	15,289	14,453	30,154	1,459	2,283	8	-		3,750
2003	3,233	-	3	87	403	3,726	34	-	59	24,901	20,544	45,538	433	1,535	6	13	117	2,104
2004	8,880	19	-	16	62	8,977	105	-	126	18,444	22,159	40,834	884	387	-	27	862	2,160
2005	4,743	15	-	0	85	4,843	2	-	66	8,861	15,635	24,564	1,472	2,124	-	-	22	3,618
2006	9,806	-	-	0	101	9,907	109	-	1	10,642	18,968	29,720	1,999	1,977	-	-	-	3,976
2007	4,189	-	-	-	15	4,204	117	-	21	8,955	18,704	27,797	2,262	1,625	-	-	48	3,935
2008	4,392	14	15	*	*	4,421	10	-	*	73	*	83	3,585	2,560	*	*	7	6,152

TABLE A-2a. (continued)
TABLA A-2a. (continuación)

	Bonitos						Unidentified tunas—Atunes no identificados						Total					
	PS		LP	LL	OTR + NK	Total	PS		LP	LL	OTR + NK	Total	PS		LP	LL	OTR + NK	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1979	1,801	-	3	-	2,658	4,462	558	-	-	-	3,016	3,574	326,385	-	11,353	72,530	12,385	422,653
1980	6,089	-	36	-	2,727	8,852	442	-	-	-	836	1,278	309,179	-	7,176	83,157	12,173	411,685
1981	5,690	-	27	-	4,609	10,326	213	-	3	-	1,109	1,325	311,315	-	8,024	68,714	19,740	407,793
1982	2,122	-	-	-	6,776	8,898	47	-	-	-	382	429	229,200	-	5,538	72,768	11,390	318,896
1983	3,827	-	2	-	7,291	11,120	60	-	-	-	4,711	4,771	151,307	-	8,884	78,401	21,488	260,080
1984	3,514	-		-	7,291	10,805	6	-	-	-	2,524	2,530	213,436	-	7,318	63,486	20,854	305,094
1985	3,599	-	5	-	7,869	11,473	19	-	-	-	678	697	276,288	-	2,900	86,836	15,694	381,718
1986	232	-	258	-	1,889	2,379	177	-	4	-	986	1,167	334,897	-	4,806	131,742	8,078	479,523
1987	3,195	-	121	-	1,782	5,098	481	-	-	-	2,043	2,524	332,432	-	7,781	129,066	6,941	476,220
1988	8,811	-	739	-	947	10,497	79	-	-	-	2,939	3,018	377,183	-	9,063	97,380	11,229	494,855
1989	11,278	-	818	-	465	12,561	36	-	-	-	626	662	388,179	-	7,929	94,811	5,160	496,079
1990	13,641	-	215	-	371	14,227	200	-	-	3	692	895	359,640	-	3,945	140,096	8,165	511,846
1991	1,207	-	82	-	242	1,531	4	-	-	29	192	225	300,406	-	5,520	143,057	6,158	455,141
1992	977	-	-	-	318	1,295	24	-	-	27	1,071	1,122	322,617	-	6,001	120,609	10,276	459,503
1993	599	12	1	-	436	1,048	9	2,022	-	10	4,082	6,123	314,271	22,242	8,725	107,814	14,577	467,629
1994	8,331	147	362	-	185	9,025	9	498	-	1	464	972	322,930	18,835	7,312	111,902	13,925	474,904
1995	7,929	55	81	-	54	8,119	11	626	-	0	1,004	1,641	396,574	27,028	7,067	85,152	14,128	529,949
1996	647	1	7	-	16	671	37	1,028	-	0	1,038	2,103	413,513	39,837	6,396	71,281	13,182	544,209
1997	1,097	4	8	-	34	1,143	71	3,383	-	7	1,437	4,898	466,482	48,158	7,747	84,588	9,969	616,944
1998	1,330	4	7	-	588	1,929	13	1,233	-	24	18,158	19,428	442,365	33,277	6,896	74,758	34,820	592,116
1999	1,719	0	-	24	369	2,112	27	3,092	-	2,113	4,279	9,511	599,160	44,083	4,059	62,255	24,404	733,961
2000	636	-		75	56	767	190	1,410	-	1,992	1,468	5,060	559,080	39,537	2,809	83,304	16,787	701,517
2001	17	-	0	34	19	70	191	679	-	2,448	55	3,373	591,043	22,798	4,522	121,617	14,814	754,794
2002	-	-	-	-	1	1	576	1,863	-	482	1,422	4,343	627,074	21,747	1,958	116,058	17,207	784,044
2003	-	-	1	-	25	26	80	1,238	-	215	750	2,283	713,590	33,502	1,177	110,800	25,781	884,850
2004	15	35	1	8	3	62	256	973	-	349	258	1,836	545,993	23,354	2,539	81,819	25,272	678,977
2005	313	18	0	-	11	342	190	1,922	-	363	427	2,902	605,925	26,188	3,187	62,782	19,836	717,918
2006	3,507	80	12	-	3	3,602	49	1,910	-	21	193	2,173	563,186	20,420	1,134	53,520	21,748	660,008
2007	15,847	628	107	-	0	16,582	600	1,221	-	2,196	189	4,206	464,643	13,618	1,298	50,085	21,053	550,697
2008	7,063	65	9	*	*	7,137	135	2,026	*	933	113	3,207	572,214	17,219	1,335	20,313	570	611,651

TABLE A-2b. Estimated retained catches, by gear type, and estimated discards, by purse-seine vessels with carrying capacities greater than 363 t only, of billfishes, in metric tons, in the EPO, 1979-2008 Data for 2006-2008 are preliminary. PS dis. = discards by purse-seine vessels.
TABLA A-2b. Estimaciones de las capturas retenidas, por arte de pesca, y de los descartes, por buques cerqueros de más de 363 t de capacidad de acarreo únicamente, de peces picudos, en toneladas métricas, en el OPO, 1979-2008. Los datos de 2006-2008 son preliminares. PS dis. = descartes por buques cerqueros.

	Swordfish—Pez espada				Blue marlin—Marlín azul				Black marlin—Marlín negro				Striped marlin—Marlín rayado			
	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total
1979	-	2,658	614	3,272	-	4,528	-	4,528	-	332	-	332	-	4,137	-	4,137
1980	-	3,746	1107	4,853	-	4,016	-	4,016	-	335	-	335	-	4,827	-	4,827
1981	-	3,070	1134	4,204	-	4,476	-	4,476	-	247	-	247	-	4,876	-	4,876
1982	-	2,604	1551	4,155	-	4,745	-	4,745	-	213	-	213	-	4,711	-	4,711
1983	-	3,341	2338	5,679	-	4,459	-	4,459	-	240	-	240	-	4,472	-	4,472
1984	-	2,752	3336	6,088	-	5,197	-	5,197	-	248	-	248	-	2,662	-	2,662
1985	-	1,885	3768	5,653	-	3,588	-	3,588	-	180	-	180	-	1,599	-	1,599
1986	-	3,286	3294	6,580	-	5,278	-	5,278	-	297	-	297	-	3,540	-	3,540
1987	-	4,676	3740	8,416	-	7,282	-	7,282	-	358	-	358	-	7,647	-	7,647
1988	-	4,916	5642	10,558	-	5,662	-	5,662	-	288	-	288	-	5,283	-	5,283
1989	-	5,202	6072	11,274	-	5,392	-	5,392	-	193	-	193	-	3,473	-	3,473
1990	-	5,807	5066	10,873	-	5,540	-	5,540	-	223	-	223	-	3,260	-	3,260
1991	17	10,671	4307	14,995	69	6,719	-	6,788	58	246	-	304	76	2,993	-	3,069
1992	4	9,820	4267	14,091	52	6,627	-	6,679	95	228	-	323	69	3,054	-	3,123
1993	5	6,187	4414	10,606	106	6,571	-	6,677	93	217	-	310	71	3,575	-	3,646
1994	4	4,990	3822	8,816	97	9,027	-	9,124	72	256	-	328	37	3,396	-	3,433
1995	4	4,495	2974	7,473	99	7,288	-	7,387	76	158	-	234	24	3,249	-	3,273
1996	1	7,071	2486	9,558	84	3,596	-	3,680	79	99	-	178	25	3,218	-	3,243
1997	4	10,580	1781	12,365	149	5,808	-	5,957	100	153	-	253	28	4,473	-	4,501
1998	3	9,800	3246	13,049	152	5,057	-	5,209	102	168	-	270	21	3,558	-	3,579
1999	2	7,569	1965	9,536	210	3,690	-	3,900	114	94	-	208	36	2,621	0	2,657
2000	2	8,930	2383	11,315	146	3,634	-	3,780	92	105	-	197	19	1,889	0	1,908
2001	4	16,007	1964	17,975	171	4,197	-	4,368	123	123	-	246	21	1,961	0	1,982
2002	1	17,598	2119	19,718	230	3,481	-	3,711	126	78	-	204	77	2,159	1	2,237
2003	4	18,161	354	18,519	206	4,016	-	4,222	146	72	-	218	33	1,906	6	1,945
2004	2	15,372	309	15,683	165	3,782	-	3,947	75	41	-	116	22	1,548	-	1,570
2005	2	8,910	4304	13,216	227	3,328	-	3,555	107	37	-	144	38	1,521	-	1,559
2006	7	8,916	3800	12,723	196	2,061	105	2,362	142	32	-	174	55	1,500	-	1,555
2007	4	4,353	4377	8,734	137	2,295	106	2,538	83	37	-	120	36	1,400	6	1,442
2008	6	125	19	150	149	*	*	149	78	*	-	78	38	*	*	38

TABLE A-2b. (continued)
TABLA A-2b. (continuación)

	Shortbill spearfish—Marlín trompa corta				Sailfish—Pez vela				Unidentified istiophorid billfishes—Picudos istiofóridos no identificados				Total billfishes—Total de peces picudos			
	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total	PS dis.	LL	OTR	Total
1979	-	-	-	-	-	251	-	251	-	6	-	6	-	11,912	614	12,526
1980	-	-	-	-	-	244	-	244	-	0	-	-	-	13,168	1,107	14,275
1981	-	-	-	-	-	379	-	379	-	9	-	9	-	13,057	1,134	14,191
1982	-	-	-	-	-	1,084	-	1,084	-	3	-	3	-	13,360	1,551	14,911
1983	-	-	-	-	-	890	-	890	-	2	-	2	-	13,404	2,338	15,742
1984	-	-	-	-	-	345	-	345	-	-	-	-	-	11,204	3,336	14,540
1985	-	-	-	-	-	395	-	395	-	1	-	1	-	7,648	3,768	11,416
1986	-	5	-	5	-	583	-	583	-	1	-	1	-	12,990	3,294	16,284
1987	-	15	-	15	-	649	-	649	-	398	-	398	-	21,025	3,740	24,765
1988	-	13	-	13	-	649	-	649	-	368	-	368	-	17,179	5,642	22,821
1989	-	-	-	-	-	192	-	192	-	51	-	51	-	14,503	6,072	20,575
1990	-	-	-	-	-	6	-	6	-	125	-	125	-	14,961	5,066	20,027
1991	-	1	-	1	40	717	-	757	-	112	-	112	-	21,459	4,307	26,026
1992	-	1	-	2	41	1,351	-	1,392	-	1,123	-	1,123	260	22,204	4,267	26,733
1993	1	1	-	1	58	2,266	-	2,324	97	1,650	-	1,747	262	20,467	4,414	25,311
1994	0	144	-	144	38	1,682	-	1,720	23	1,028	-	1,051	430	20,523	3,822	24,616
1995	0	155	-	156	28	1,351	-	1,379	12	232	-	244	271	16,928	2,974	20,146
1996	1	126	-	127	22	738	-	760	19	308	1	328	244	15,156	2,487	17,874
1997	1	141	-	142	24	1,217	-	1,241	8	1,324	-	1,332	231	23,696	1,781	25,791
1998	1	200	-	200	58	1,382	-	1,440	13	575	54	642	314	20,740	3,300	24,389
1999	0	278	-	279	40	1,216	-	1,256	16	1,136	0	1,152	349	16,604	1,965	18,988
2000	1	285	-	286	48	1,380	-	1,428	8	879	136	1,023	419	17,102	2,519	19,937
2001	1	304	-	305	63	1,477	325	1,865	6	1,742	204	1,952	316	25,811	2,493	28,693
2002	1	273	-	274	35	1,792	17	1,844	9	1,862	14	1,885	389	27,243	2,151	29,873
2003	1	290	-	294	86	1,174	0	1,260	10	1,389	-	1,399	479	27,008	360	27,857
2004	4	207	-	208	32	1,400	17	1,449	9	1,384	-	1,393	489	23,734	326	24,366
2005	1	229	-	230	44	805	15	864	8	900	-	908	306	15,730	4,319	20,476
2006	1	234	-	236	43	745	35	823	25	491	1	517	427	13,979	3,941	18,390
2007	2	252	-	253	50	790	32	872	17	104	15	136	470	9,231	4,536	14,095
2008	1	*	*	1	43	*	32	75	20	8	*	28	328	133	51	519

TABLE A-2c. Estimated retained catches (Ret.), by gear type, and estimated discards (Dis.), by purse-seine vessels of more than 363 t carrying capacity only, of other species, in metric tons, in the EPO, 1979-2008 The data for 2006-2008 are preliminary.

TABLA A-2c. Estimaciones de las capturas retenidas (Ret.), por arte de pesca, y de los descartes (Dis.), por buques cerqueros de más de 363 t de capacidad de acarreo únicamente, de otras especies, en toneladas métricas, en el OPO, 1979-2008. Los datos de 2006-2008 son preliminares.

	Carangids—Carángidos						Dorado (*Coryphaena* spp.)						Elasmobranchs—Elasmobranquios						Other fishes—Otros peces					
	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total	PS		LP	LL	OTR	Total
	Ret.	Dis.					Ret.	Dis.					Ret.	Dis.					Ret.	Dis.				
1979	81	-	-	-	-	81	124	-	-	-	927	1,051	7	-	-	17	1,290	1,314	478	-	-	7	-	485
1980	224	-	2	-	-	226	124	-	-	-	1,001	1,125	16	-	-	7	858	881	301	-	-	-	-	301
1981	111	-	17	-	-	128	410	-	-	-	628	1,038	49	-	-	120	1,211	1,380	201	-	3	51	-	255
1982	122	-		-	-	122	274	-	-	-	980	1,254	22	-	30	215	864	1,131	288	-	-	59	-	347
1983	1,240	-	-	-	-	1,240	88	-	-	-	3,374	3,462	34	-	-	85	695	814	288	-	1	-	-	289
1984	414	-	-	-	-	414	103	-	-	-	202	305	47	-	-	6	1,039	1,092	415	-	-	-	3	418
1985	317	-	4	-	-	321	93	-	-	-	108	201	27	-	-	13	481	521	77	-	-	7	-	84
1986	188	-	19	-	-	207	632	-	-	-	1,828	2,460	29	-	-	1	1,979	2,009	94	-	-	0	-	94
1987	566	-	5	-	-	571	271	-	-	-	4,272	4,543	96	-	-	87	1,020	1,203	210	-	-	535	-	745
1988	825	-	1	-	-	826	69	-	-	-	1,560	1,629	1	-	-	23	1,041	1,065	321	-	-	360	-	681
1989	60	-	2	-	-	62	210	-	-	-	1,680	1,890	29	-	-	66	1,025	1,120	670	-	-	152	-	822
1990	234	-		-	1	235	63	-	-	-	1,491	1,554	-	-	-	280	1,095	1,375	433	-	--	260	14	707
1991	116	-	-	-	-	116	57	-	-	-	613	677	1	-	6	1112	1,346	2,465	462	-	1	457	0	920
1992	116	-	-	-	-	116	69	-	-	7	708	814		-	-	2,293	1,190	3,483	555	-		182	-	737
1993	17	64	-	-	2	83	36	722	-	37	724	1,499	24	1,268	-	1,026	916	3,234	227	642	2	184	-	1,055
1994	7	40	-	-	16	63	279	1,245	-	17	3,459	5,029	113	1,125	-	1,234	1,314	3,786	10	807	-	251	-	1,068
1995	11	48	-	-	9	68	110	1,097	-	46	2,127	3,373	20	1,215	-	922	1,075	3,232	1	940	-	210	-	1,151
1996	55	216	-	-	57	328	119	1,331	-	39	183	1,676	3	1,062	-	1,121	2,151	4,337	5	625	-	456	-	1,086
1997	2	149	-	-	39	190	36	1,237	-	43	3,109	11,248	22	1,499	-	956	2,328	4,805	17	903	-	848	-	1,768
1998	57	175	-	-	4	236	15	835	-	6,866	9,167	12,545	6	1,555	-	2,099	4,393	8,053	67	1,378	-	1,340	-	2,785
1999	35	210	1	-	-	246	75	1,243	-	2,528	1,160	8,762		970	-	5,995	2,088	9,053	88	916	-	975	-	1,979
2000	57	106		4	4	171	109	1,490	-	6,284	1,041	6,177	3	933	-	8,621	405	9,962	1	559	-	1,490	-	2,050
2001	-	161	-	18	26	205	148	2,222	-	3,537	2,825	21,136	-	751	-	12,551	107	13,409	15	1,511	-	1,726	1	3,253
2002	-	131	-	15	20	166	45	1,825	-	15,941	4,137	15,471	-	808	-	12,040	99	12,947		1,083	-	1,914	0	2,997
2003	-	154	-	54	-	208	23	905	-	9,464	288	6,517	-	845	-	14,881	372	16,098	1	693	-	4,681	-	5,375
2004	-	144	-	1	-	145	99	1,037	-	5,301	4,645	9,767	-	634	9	11,295	164	12,102	18	1,061	-	671	-	1,750
2005	61	100	-		-	161	111	1,048	-	3,986	8,667	13,680	-	359	4	12,105	220	12,688	195	618	-	558	-	1,371
2006	133	393	-	-	-	526	132	1,256	2	3,854	13,110	16,934	-	428	7	6,033	252	6,720	560	729	-	262	100	1,651
2007	108	272	9	-	8	403	333	1,281	-	2,434	4,831	9,346	5	296	10	8,541	404	9,256	920	716	-	581	120	2,337
2008	34	111	*	*	4	151	108	1,166	*	2,901	2,996	4,631	*	342	*	1,045	87	1,474	898	493	*	4	*	1,395

TABLE A-3a. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2004. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.
TABLA A-3a. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2004 Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2004		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	190	26	120	-	296	-	-	-	632
CAN	LTL	-	-	-	-	7,676	-	-	-	7,676
CHL	LL	86	-	9	-	8	27	8	-	138
CHN	LL	798	-	2,645	-	590	-	-	-	4,033
CRI	LL	1,701	-	21	-	-	-	-	-	1,722
ECU	LL	-	-	312	-	-	-	-	-	312
	NK	-	-	185	-	-	-	-	-	185
	PS	40,839	89,120	31,368	-	-	97	7	8	161,439
ESP	LL	-	-	5	-	-	-	-	318	323
HND	PS	1,056	3,602	1,830	-	-	-	-	1	6,489
JPN	LL	7,338	97	21,236	2	2,264	-	-	-	30,937
KOR	LL	2,997	31	10,729	-	783	-	-	-	14,540
MEX	LL	32	-	-	14	-	-	-	-	46
	LP	1,882	528	-	-	-	-	-	-	2,410
	PS	90,902	24,968	0	8,880	104	418	8	54	125,334
NIC	LL	43	-	-	-	-	-	-	-	43
PAN	LL	2,802	148	48	-	143	-	-	-	3,141
	PS	31,236	20,184	11,261	-	-	25	-	2	62,708
PER	NK	291	1,098	-	-	-	862	-	258	2,509
PYF	LL	767	56	405	-	1,802	-	-	-	3,030
SLV	LL	9	-	4	-	-	-	-	-	13
TWN	LL	1,824	339	7,384	-	9,988	-	-	-	19,535
USA	GN	1	-	-	10	12	-	3	-	26
	LL	6	3	149	-	8	-	-	-	166
	LP	2	-	-	-	126	-	1	-	129
	LTL	1	-	-	-	12,718	-	-	-	12,719
	PS	2,523	5,071	3,689	-	1	296	-	178	11,758
	RG	334	7	9	52	1,506	-	-	-	1,908
VEN	PS	54,095	12,942	1,040	-	-	47	-	1	68,125
VUT	LL	171	-	407	-	2,554	-	-	-	3,132
	PS	1,621	8,313	5,096	-	-	-	-	0	15,030
OTR[1]	LL[2]	15	13	9	-	255	-	-	31	323
	PS[3]	47,325	34,464	13,308	-	-	1	-	12	95,110

[1] This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.
[2] Includes Cook Islands, Honduras and Uruguay—Incluye Honduras, Islas Cook y Uruguay.
[3] Includes Bolivia, Colombia, El Salvador, Guatemala, Nicaragua, Spain, and Unknown—Incluye Bolivia, Colombia, El Salvador, España, Guatemala, Nicaragua y Desconocido.

TABLE A-3b. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2005. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.
TABLA A-3b. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2005 Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2005		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	164	16	112	-	46	-	-	-	338
CAN	LTL	-	-	-	-	4,799	-	-	-	4,799
CHL	NK	110	-	24	-	7	22	11	-	174
CHN	LL	682	-	2,104	-	895	-	-	-	3,681
CRI	LL	1,791	-	23	-	-	-	-	-	1,814
ECU	LL	-	-	39	-	-	-	-	-	39
	PS	40,754	138,609	32,680	-	-	141	40	28	212,252
ESP	LL	-	-	-	-	-	-	-	362	362
HND	PS	2,215	5,406	3,618	-	-	0	-	0	11,239
JPN	LL	3,966	40	19,113	0	2,593	-	-	-	25,712
KOR	LL	532	-	11,580	-	172	-	-	-	12,284
MEX	LP	1,821	1,300	-	-	-	-	-	-	3,121
	PS	111,458	31,685	0	4,542	-	1,193	273	92	149,243
NIC	LL	18	-	-	-	-	-	-	-	18
	PS	6,912	2,469	33	-	-	0	-	0	9,414
PAN	LL	1,782	94	30	-	91	-	-	-	1,997
	PS	29,897	28,055	13,026	-	-	8	0	8	70,994
PER	NK	458	365	-	-	-	-	-	427	1,250
	OTR	708	1,398	-	-	-	-	-	-	2,106
PYF	LL	530	14	398	-	1,572	-	-	-	2,514
SLV	PS	6,905	5,258	989	-	-	73	-	60	13,285
TWN	LL	2,422	66	6,441	-	3,300	-	-	-	12,229
USA	GN	2	-	-	5	20	-	-	-	27
	LL	7	1	536	-	13	-	-	-	557
	LP	-	-	-	-	66	-	-	-	66
	LTL	-	-	-	-	9,033	-	-	-	9,033
	NK	-	-	-	3	-	-	-	-	3
	RG	574	17	1	77	1,719	-	-	-	2,388
VEN	PS	41,604	14,015	116	-	-	41	-	2	55,778
VUT	LL	-	-	1,056	-	179	-	-	-	1,235
OTR[1]	LL	2	-	-	-	57	-	-	2	61
	PS[2]	27,854	36,283	19,364	201	2	16	-	-	83,720

[1] This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.
[2] Includes Colombia, Guatemala, Spain, United States, Vanuatu and Unknown—Incluye Colombia, España, Estados Unidos, Guatemala, Vanuatú y Desconocido.

TABLE A-3c. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2006. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.
TABLA A-3c. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2006. Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2006		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	105	13	75	-	8	-	-	-	201
CAN	LTL	-	-	-	-	5,819	-	-	-	5,819
CHL	NK	79	-	36	-	5	-	3	-	123
CHN	LL	246	-	709	-	14	-	-	-	969
CRI	LL	951	-	12	-	-	-	-	-	963
ECU	LL	-	-	120	-	-	-	-	-	120
	PS	25,544	140,610	38,597	-	-	80	-	17	204,848
HND	PS	1,492	6,270	3,832	-	-	-	-	-	11,594
JPN	LL	3,008	17	16,460	0	2,242	-	-	-	21,727
KOR	LL	-	-	8,694	-	58	-	-	-	8,752
MEX	LP	686	435	-	-	-	-	12	-	1,133
	PS	67,958	18,220	59	9,806	109	1,897	3,259	31	101,339
NIC	LL	3	-	-	-	-	-	-	18	21
	PS	7,201	4,886	2,486	-	-	0	-	1	14,574
PAN	LL	2,164	114	37	-	110	-	-	-	2,425
	PS	23,516	44,013	13,247	-	-	8	-	0	80,784
PER	NK	595	73	-	-	-	-	-	192	860
PYF	LL	537	22	388	-	2,273	-	-	-	3,220
	NK	434	899	-	-	114	-	-	-	1,447
TWN	LL	1,671	57	6,412	-	4,235	-	-	-	12,375
USA	GN	1	2	4	0	3	-	-	1	11
	LL	21	1	85	-	14	-	-	-	121
	LTL	-	-	-	-	12,524	-	-	-	12,524
	RG	349	12	0	101	296	-	-	-	758
VEN	PS	17,916	23,804	3,729	-	-	9	248	0	45,706
VUT	LL	-	-	935	-	1,688	-	-	-	2,623
OTR[1]		-	-	-	-	208	-	-	3	211
	PS[2]	22,703	59,605	22,028	-	-	5	-	-	104,341

[1] This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.
[2] Includes Bolivia, Colombia, El Salvador, Guatemala, Spain, United States and Vanuatu—Incluye Bolivia, Colombia, El Salvador, España, Estados Unidos, Guatemala y Vanuatú.

TABLE A-3d. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2007 The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.
TABLA A-3d. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2007 Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2007		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
BLZ	LL	42	11	93	-	1	-	-	-	147
CAN	LTL	-	-	-	-	6,112	-	-	-	6,112
CHL	NK	76	-	37	-	-	-	-	-	113
CHN	LL	224	-	2,324	-	76	-	-	-	2,624
CRI	LL	1,080	-	14	-	-	-	-	-	1,094
ECU	PS	19,741	93,510	40,424	-	-	662	1,361	14	155,712
JPN	LL	5,004	33	14,958	-	1,997	-	-	-	21,992
KOR	LL	353	0	5,611	-	73	-	-	-	6,037
MEX	LL	8	0	-	-	-	0	0	0	8
	LP	894	276	-	-	-	-	107	-	1,277
	PS	64,940	21,694	0	4,147	40	1,449	14,459	345	107,074
NIC	LL	48	-	-	-	-	-	-	2	50
	PS	5,449	2,964	503	-	-	0	-	0	8,916
PAN	LL	-	-	-	-	-	-	-	2,194	2,194
	PS	28,853	23,052	8,855	-	-	92	23	3	60,878
PER	NK	693	73	-	-	-	48	-	189	1,003
PYF	LL	408	22	361	-	2,962	-	-	-	3,753
	NK	406	713	-	-	87	-	-	-	1,206
TWN	LL	745	40	6,057	-	2,656	-	-	-	9,498
USA	GN	0	0	4	2	4	-	-	-	10
	LL	10	1	414	0	7	-	-	-	432
	LTL	-	-	-	-	11,436	-	-	-	11,436
	NK	1	-	3	0	1	-	-	-	5
	RG	91	1	-	14	1,064	-	-	-	1,170
VEN	PS	23,992	21,604	1,193	-	-	23	4	6	46,822
VUT	LL	-	-	1,073	-	1,183	-	-	-	2,256
OTR[1]	PS[2]	27,289	45,466	12,099	42	98	36	0	232	85,262

[1] This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.
[2] Includes Bolivia, Colombia, El Salvador, Guatemala, Honduras, Spain, United States, Vanuatu and Unknown—Incluye Bolivia, Colombia, El Salvador, España, Estados Unidos, Guatemala, Honduras, Vanuatú y Desconocido.

TABLE A-3e. Estimates of the retained catches of tunas and bonitos, by flag, gear type, and species, in metric tons, in the EPO, 2008. The purse-seine and pole-and-line data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates and are preliminary.
TABLA A-3e. Estimaciones de las capturas retenidas de atunes y bonitos, por bandera, arte de pesca, y especie, en toneladas métricas, en el OPO, 2008 Los datos de los atunes aleta amarilla, barrilete, y patudo de las pesquerías cerquera y cañera fueron ajustados a la estimación de composición por especie, y son preliminares.

2008		YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total
CHN	LL	*	*	885	*	*	*	*	*	885
ECU	PS	18,800	144,058	41,162	*	*	110	23	88	204,241
JPN	LL	*	*	11,938	*	66	*	*	*	12,004
KOR	LL	*	*	4,150	*	7	*	*	*	4,157
MEX	LL	2	*	*	0	*	*	*	*	2
	LP	812	499	*	15	*	*	9	*	1,335
	PS	84,703	21,432	328	4,392	10	3,366	6,960	40	121,231
NIC	PS	5,831	6,003	846	*	*	3	0	0	12,683
PAN	LL	*	*	*	*	*	*	*	933	933
	PS	27,152	42,452	11,357	*	*	47	66	4	81,078
PER	NK	172	278	*	*	*	7	*	113	570
TWN	LL	*	*	1,986	*	*	*	*	*	1,986
VEN	PS	21,257	26,910	3,179	*	*	57	9	3	51,415
VUT	LL	*	*	346	*	*	*	*	*	346
OTR[1]	PS[2]	28,103	54,675	18,781	*	*	2	5	0	101,566

[1] This category is used to avoid revealing the operations of individual vessels or companies—Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.
[2] Includes Colombia, El Salvador, Guatemala, Honduras, Peru, Spain, United States and Vanuatu—Incluye Colombia, El Salvador, España, Estados Unidos, Guatemala, Honduras, Perú y Vanuatú

TABLE A-4a. Preliminary estimates of the retained catches and landings, in metric tons, of tunas and bonitos caught by purse-seine and pole-and-line vessels in 2007, by species and vessel flag (upper panel) and locations where processed (lower panel). The data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates, and are preliminary.

TABLA A-4a. Estimaciones preliminares de las capturas retenidas y descargas, en toneladas métricas, de atunes y bonitos efectuadas por buques cerqueros y cañeros en el OPO en 2007, por especie y bandera del buque (panel superior) y localidad donde fueron procesadas (panel inferior). Los datos de los atunes aleta amarilla, barrilete, y patudo fueron ajustados a las estimaciones de composición por especie, y son preliminares.

	YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total	%
	Retained catches–Capturas retenidas									
ECU	19,741	93,510	40,424	*	*	662	1,361	14	155,712	33.4
MEX	65,834	21,970	0	4,147	40	1,449	14,566	345	108,351	23.3
NIC	5,449	2,964	503	*	*	*	*	*	8,916	1.9
PAN	28,853	23,052	8,855	*	*	92	23	3	60,878	13.1
VEN	23,992	21,604	1,193	*	*	23	4	6	46,822	10.0
OTR[1]	27,289	45,466	12,099	42	98	36	0	232	85,262	18.3
Total	171,158	208,566	63,074	4,189	138	2,262	15,954	600	465,941	
	Landings–Descargas									
COL	36,544	20,963	3,671	*	*	*	*	*	61,178	13.0
ECU	37,272	136,383	50,011	*	*	777	1,554	18	226,015	48.1
MEX	59,669	21,839	137	4,144	40	1,419	14,373	343	101,964	21.7
VEN	9,532	10,207	394	*	*	22	4	5	20,164	4.3
OTR[2]	33,933	22,460	3,715	45	98	42	23	232	60,548	12.9
Total	176,950	211,852	57,928	4,189	138	2,260	15,954	598	469,869	

[1] Includes Bolivia, Colombia, El Salvador, Guatemala, Honduras, Spain, United States, Vanuatu and Unknown This category is used to avoid revealing the operations of individual vessels or companies.

[1] Incluye Bolivia, Colombia, El Salvador, España, Estados Unidos, Guatemala,Honduras,Vanuatú y Desconocido Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

[2] Includes Costa Rica, El Salvador,Guatamala, Peru, United States, and Unknown. This category is used to avoid revealing the operations of individual vessels or companies.

[2] Incluye Costa Rica,El Salvador, España, Estados Unidos, Guatamala, Perú, y Desconocido. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

TABLE A-4b. Preliminary estimates of the retained catches and landings, in metric tons, of tunas and bonitos caught by purse-seine and pole-and-line vessels in the EPO in 2008, by species and vessel flag (upper panel) and locations where processed (lower panel). The data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimates, and are preliminary.

TABLA A-4b. Estimaciones preliminares de las capturas retenidas y descargas, en toneladas métricas, de atunes y bonitos efectuadas por buques cerqueros y cañeros en el OPO en 2008, por especie y bandera del buque (panel superior) y localidad donde fueron procesadas (panel inferior). Los datos de los atunes aleta amarilla, barrilete, y patudo fueron ajustados a las estimaciones de composición por especie, y son preliminares.

	YFT	SKJ	BET	PBF	ALB	BKJ	BZX	TUN	Total	%
	Retained catches–Capturas retenidas									
ECU	18,800	144,058	41,162	*	*	110	23	88	204,241	35.6
MEX	85,515	21,931	328	4,407	10	3,366	6,969	40	122,566	21.4
NIC	5,831	6,003	846	*	*	3	*	*	12,683	2.2
PAN	27,152	42,452	11,357	*	*	47	66	4	81,078	14.1
VEN	21,257	26,910	3,179	*	*	57	9	3	51,415	9.0
OTR[1]	28,103	54,675	18,781	*	*	2	5	0	101,566	17.7
Total	186,658	296,029	75,653	4,407	10	3,585	7,072	135	573,549	
	Landings–Descargas									
COL	27,723	26,579	4,792	*	*	22	*	1	59,117	10.4
ECU	38,395	202,425	60,031	*	*	139	94	70	301,154	52.9
MEX	84,574	26,179	2,026	4,407	10	3,364	6,975	39	127,574	22.4
VEN	9,171	13,048	1,568	*	*	52	9	3	23,851	4.2
OTR[2]	23,297	27,037	6,745	*	*	6	*	5	57,090	10.0
Total	183,160	295,268	75,162	4,407	10	3,583	7,078	118	568,786	

[1] Includes Colombia, El Salvador, Guatemala, Honduras, Spain, Peru, United States, and Vanuatu. This category is used to avoid revealing the operations of individual vessels or companies.

[1] Incluye Colombia, El Salvador, España, Estados Unidos, Guatemala, Honduras, Perú y Vanuatú. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

[2] Includes Costa Rica, El Salvador, Guatemala, Peru, Spain,United States, and Unknown. This category is used to avoid revealing the operations of individual vessels or companies.

[2] Incluye Costa. Rica, El Salvador, España , Estados Unidos, Guatemala, Perú, y Desconocido. Se usa esta categoría para no revelar información sobre las actividades de buques o empresas individuales.

TABLE A-5. Annual retained catches of Pacific bluefin tuna, by gear type and flag, in metric tons. The data for 2006 and 2007 are preliminary.
TABLA A-5. Capturas retenidas anuales de atún aleta azul del Pacífico, por arte de pesca y bandera, en toneladas métricas. Los datos de 2006 y 2007 son preliminares.

PBF	Western Pacific flags—Banderas del Pacífico occidental[1]										Eastern Pacific flags—Banderas del Pacífico oriental						Total
	JPN				KOR[1]		TWN			Sub-total	USA		MEX		OTR	Sub-total	
	PS	LP	LL	OTR	PS	OTR	PS	LL	OTR		PS	OTR	PS	OTR	OTR		
1979	13,881	1,250	764	9,642	-	-	-	58	-	25,595	5,889	17	213	-	-	6,119	31,715
1980	11,327	1,392	851	6,004	-	-	-	114	5	19,693	2,327	31	582	-	-	2,940	22,634
1981	25,422	754	618	6,559	-	-	-	179	-	33,532	867	24	218	-	-	1,109	34,641
1982	19,234	1,777	737	4,239	31	-	-	207	2	26,228	2,639	13	506	-	-	3,159	29,387
1983	14,774	356	224	4,116	13	-	9	175	2	19,670	629	44	214	-	-	887	20,557
1984	4,433	587	164	4,977	4	-	5	477	8	10,655	673	78	166	-	-	917	11,573
1985	4,154	1,817	115	5,587	1	-	80	210	11	11,975	3,320	117	676	-	-	4,113	16,089
1986	7,412	1,086	116	5,100	344	-	16	70	13	14,157	4,851	69	189	-	-	5,109	19,266
1987	8,653	1,565	244	3,524	89	-	21	365	14	14,474	861	54	119	-	-	1,033	15,507
1988	3,605	907	187	2,464	32	-	197	108	62	7,562	923	56	447	1	-	1,427	8,989
1989	6,190	754	241	1,933	71	-	259	205	54	9,707	1,046	134	57	-	-	1,236	10,943
1990	2,989	536	336	2,421	132	-	149	189	315	7,067	1,380	157	50	-	-	1,587	8,653
1991	9,808	286	238	4,204	265	-	-	342	119	15,262	410	98	9	-	2	519	15,781
1992	7,162	166	529	3,205	288	-	73	464	8	11,896	1,928	171	-	-	0	2,099	13,995
1993	6,600	129	822	1,759	40	-	1	471	3	9,825	580	401	-	-	6	986	10,811
1994	8,131	162	1,226	5,667	50	-	-	559	-	15,795	906	148	63	2	2	1,120	16,916
1995	18,909	270	688	7,224	821	-	-	335	2	28,248	657	308	11	-	2	977	29,225
1996	7,644	94	909	5,360	102	-	-	956	-	15,066	4,639	110	3,700	-	4	8,453	23,519
1997	13,152	34	1,312	4,354	1054	-	-	1,814	-	21,720	2,240	290	367	-	14	2,911	24,632
1998	5,390	85	1,266	4,439	188	-	-	1,910	-	13,277	1,771	694	1	0	20	2,487	15,764
1999	16,173	35	1,174	5,192	256	-	-	3,089	-	25,919	184	625	2,369	35	21	3,234	29,153
2000	16,486	102	960	6,935	1,976	-	-	2,780	2	29,240	693	404	3,025	99	21	4,242	33,482
2001	7,620	180	797	5,477	968	10	-	1,839	4	16,895	292	404	863	-	50	1,609	18,504
2002	9,273	99	846	4,158	767	1	-	1,523	4	16,671	50	666	1,708	2	66	2,491	19,162
2003	6,344	44	1,249	3,124	2,141	-	-	1,863	21	14,786	22	412	3,211	43	60	3,748	18,534
2004	7,369	132	1,855	3,592	636	-	-	1,714	3	15,301	-	60	8,880	14	77	9,031	24,333
2005	11,260	549	1,950	6,136	594	-	-	1,368	-	21,857	201	85	4,542	-	27	4,855	26,712
2006	7,161	108	1,151	3,742	949	-	-	1,149	1	14,261	-	98	9,706	-	24	9,828	24,089
2007	5,692	236	1,056	4,989	946	-	-	1,401	10	14,330	42	16	4,005	*	*	4,063	18,393

[1] Source: International Scientific Committee, 8th Plenanary Meeting, Pacific Bluefin Tuna, July 2008, —Fuente: Comité Científico Internacional , 8ª Reunión Plenaria, Atún Aleta Azul del Pacífico, julio de 2008

TABLE A-6a. Annual retained catches of North Pacific albacore by region and gear, in metric tons, compiled from IATTC data (EPO) and SPC data (WCPO). The data for 2007 and 2008 are preliminary.
TABLA A-6a. Capturas retenidas anuales de atún albacora del Pacífico Norte por región, en toneladas métricas, compiladas de datos de la CIAT (OPO) y la SPC (WCPO). Los datos de 2007 y 2008 son preliminares.

ALB (N)	Eastern Pacific Ocean Océano Pacífico oriental						Western and central Pacific Ocean Océano Pacífico occidental y central					Total
	LL	LP	LTL	PS	OTR	Subtotal	LL	LP	LTL	OTR	Subtotal	
1979	1,394	179	4,955	148	74	6,750	13,238	44,786	2,347	4,137	64,508	71,258
1980	1,268	407	5,421	194	168	7,458	14,328	46,717	2,347	4,539	67,931	75,389
1981	2,040	608	12,039	99	227	15,013	16,661	27,566	798	11,299	56,324	71,337
1982	1,971	198	3,303	355	257	6,084	15,783	29,841	3,410	13,706	62,740	68,824
1983	1,572	449	7,751	7	87	9,866	14,502	21,256	1,833	7,589	45,180	55,046
1984	2,592	1,441	8,343	3,910	1,427	17,713	13,070	25,602	1,011	17,243	56,926	74,639
1985	1,313	877	5,308	42	1,176	8,716	13,336	21,335	1,163	13,771	49,605	58,321
1986	698	86	4,282	47	196	5,309	12,442	16,442	456	10,742	40,082	45,391
1987	1,114	320	2,300	1	171	3,906	14,239	18,920	570	11,338	45,067	48,973
1988	899	271	4,202	17	64	5,453	14,554	6,543	165	18,904	40,166	45,619
1989	952	21	1,852	1	160	2,986	13,045	8,662	148	19,826	41,681	44,667
1990	1,143	170	2,440	39	24	3,816	15,117	8,477	465	26,135	50,194	54,010
1991	1,514	834	1,783	-	6	4,137	16,194	6,269	201	10,792	33,456	37,593
1992	1,635	255	4,515	-	2	6,407	18,054	13,633	419	16,578	48,684	55,091
1993	1,772	1	4,331	-	25	6,129	29,127	12,796	2,417	4,087	48,427	54,556
1994	2,356	85	9,574	-	106	12,121	28,386	26,304	3,560	3,380	61,630	73,751
1995	1,380	465	7,306	-	102	9,253	31,493	20,596	3,452	1,622	57,163	66,416
1996	1,675	72	8,195	11	88	10,041	37,614	20,224	13,654	982	72,474	82,515
1997	1,365	59	6,056	1	1,018	8,499	46,520	32,252	12,618	1,718	93,108	101,607
1998	1,730	81	11,936	42	1,208	14,997	46,097	22,924	8,138	2,028	79,187	94,184
1999	2,701	227	10,831	47	3,621	17,427	43,360	50,202	3,022	7,534	104,118	121,545
2000	1,880	86	10,875	71	1,798	14,710	38,990	21,533	4,370	3,187	68,080	82,790
2001	1,822	157	11,597	3	1,635	15,214	34,466	29,412	5,141	1,367	70,386	85,600
2002	1,227	381	11,906	31	2,357	15,902	31,220	48,451	4,417	3,862	87,950	103,852
2003	1,126	59	17,786	32	2,228	21,231	30,342	36,114	4,100	956	71,512	92,743
2004	854	126	20,196	105	1,518	22,799	23,381	32,254	1,977	7,459	65,071	87,870
2005	582	66	13,708	2	1,739	16,097	27,601	16,133	1,016	1,444	46,194	62,291
2006	3,797	1	18,501	109	299	22,707	24,901	15,410	447	837	41,595	64,302
2007	2,980	21	17,548	117	1,069	21,735	27,321	15,390	605	67	43,383	65,118
2008	73	*	*	10	*	83	*	*	*	*	*	83

TABLE A-6b. Annual retained catches of South Pacific albacore by region, in metric tons, compiled from IATTC data (EPO) and SPC data (WCPO). The data for 2007and 2008 are preliminary.
TABLA A-6b. Capturas retenidas anuales de atún albacora del Pacífico Sur por región, en toneladas métricas, compiladas de datos de la CIAT (OPO) y la SPC (WCPO). Los datos de 2007 y 2008 son preliminares.

ALB (S)	Eastern Pacific Ocean Océano Pacífico oriental				Western and central Pacific Ocean Océano Pacífico occidental y central					Total
	LL	LTL	OTR	Subtotal	LL	LP	LTL	OTR	Subtotal	
1979	4,189	-	14	4,203	21,973	100	814	-	22,887	27,090
1980	4,051	-	60	4,111	26,921	101	1,468	-	28,490	32,601
1981	5,235	-	35	5,270	27,459	-	2,085	5	29,549	34,819
1982	6,436	-	2	6,438	21,911	1	2,434	4	24,350	30,788
1983	5,861	-	2	5,863	18,448	-	744	37	19,229	25,092
1984	4,120	-	24	4,144	16,220	2	2,773	1,565	20,560	24,704
1985	5,955	-	170	6,125	21,183	-	3,253	1,767	26,203	32,328
1986	5,752	74	149	5,975	26,889	-	1,929	1,797	30,615	36,590
1987	8,880	188	3	9,071	13,090	9	1,946	927	15,972	25,043
1988	9,035	1,282	-	10,317	19,249	-	3,014	5,283	27,546	37,863
1989	5,832	593	90	6,515	12,392	-	7,777	21,878	42,047	48,562
1990	5,393	1,336	306	7,035	13,975	245	5,639	7,232	27,091	34,126
1991	6,379	795	170	7,344	17,006	14	7,010	1,319	25,349	32,693
1992	15,445	1,205	18	16,668	15,147	11	5,373	47	20,578	37,246
1993	9,422	35	19	9,476	20,808	74	4,261	51	25,194	34,670
1994	8,034	442	22	8,498	26,085	67	6,722	67	32,941	41,439
1995	4,805	2	15	4,822	24,536	139	7,714	89	32,478	37,300
1996	5,956	94	21	6,071	17,861	30	7,285	135	25,311	31,382
1997	8,313	466	-	8,779	18,791	21	4,213	133	23,158	31,937
1998	10,905	12	-	10,917	26,892	36	6,268	85	33,281	44,198
1999	8,932	97	7	9,036	22,978	138	3,322	67	26,505	35,541
2000	7,783	779	3	8,565	26,185	102	5,490	136	31,913	40,478
2001	17,588	528	5	18,121	31,050	37	4,614	194	35,895	54,016
2002	14,062	150	40	14,252	46,528	18	4,424	112	51,082	65,334
2003	23,775	530	3	24,308	31,841	12	5,082	135	37,070	61,378
2004	17,590	445	-	18,035	42,993	110	4,086	124	47,313	65,348
2005	8,279	181	7	8,467	48,438	22	3,270	130	51,860	60,327
2006	6,845	49	119	7,013	59,327	26	2,758	78	62,189	69,202
2007	5,975	*	87	6,062	50,849	26	2,093	101	53,069	59,131
2008	*	*	*	*	*	*	*	*	*	*

TABLE A-7. Estimated numbers of sets, by set type and vessel capacity category, and estimated retained catches, in metric tons, of yellowfin, skipjack, and bigeye tuna in the EPO, by purse-seine vessels. The data for 2008 are preliminary. The data for yellowfin, skipjack, and bigeye tunas have been adjusted to the species composition estimate and are preliminary.

TABLA A-7. Números estimados de lances, por tipo de lance y categoría de capacidad de buque, y capturas retenidas estimadas, en toneladas métricas, de atunes aleta amarilla, barrilete, y patudo en el OPO. Los datos de 2008 son preliminares. Los datos de los atunes aleta amarilla, barrilete, y patudo fueron ajustados a la estimación de composición por especie, y son preliminares.

	Number of sets—Número de lances			Retained catch—Captura retenida		
	Vessel capacity—Capacidad del buque		Total	YFT	SKJ	BET
	≤363 t	>363 t				
DEL	**Sets on fish associated with dolphins Lances sobre peces asociados con delfines**					
1993	34	6,953	6,987	110,893	587	51
1994	5	7,804	7,809	125,345	1,106	1
1995	0	7,185	7,185	132,710	2,548	1
1996	14	7,472	7,486	138,466	1,761	57
1997	43	8,977	9,020	152,228	8,157	0
1998	0	10,645	10,645	154,528	4,998	6
1999	0	8,648	8,648	143,166	1,705	5
2000	0	9,235	9,235	147,776	539	15
2001	0	9,876	9,876	238,145	1,808	6
2002	0	12,290	12,290	301,480	3,177	2
2003	0	13,760	13,760	264,035	13,354	1
2004	0	11,783	11,783	175,856	10,796	3
2005	0	12,173	12,173	166,163	12,078	2
2006	0	8,923	8,923	91,987	4,806	0
2007	0	8,871	8,871	97,351	3,285	7
2008	0	9,201	9,201	115,870	8,802	5
OBJ	**Sets on fish associated with floating objects Lances sobre peces asociados con objetos flotantes**					
1993	493	2,063	2,556	19,614	53,009	6,141
1994	668	2,770	3,438	20,843	51,125	33,960
1995	707	3,519	4,226	21,146	80,010	41,873
1996	1,230	3,965	5,195	27,842	69,614	58,371
1997	1,699	5,610	7,309	30,007	116,764	62,704
1998	1,198	5,465	6,663	26,286	110,297	41,909
1999	630	4,483	5,113	43,052	181,547	49,330
2000	508	3,713	4,221	42,702	120,616	92,339
2001	827	5,674	6,501	66,598	122,692	60,378
2002	865	5,771	6,636	37,804	116,584	55,919
2003	706	5,457	6,163	30,038	181,551	52,381
2004	615	4,986	5,601	27,587	117,555	66,079
2005	639	4,992	5,631	25,694	132,580	68,141
2006	1,158	6,862	8,020	34,000	191,803	82,273
2007	1,378	5,857	7,235	29,622	122,247	61,821
2008	1,728	6,657	8,385	37,978	155,546	73,860

TABLE A-7. (continued)
TABLA A-7 (continuación)

	Number of sets—Número de lances			Retained catch—Captura retenida		
	Vessel capacity—Capacidad del buque		Total	YFT	SKJ	BET
	≤363 t	>363 t				
NOA	**Sets on unassociated schools Lances sobre cardúmenes no asociados**					
1993	5,739	6,267	12,006	88,985	30,234	3,465
1994	5,440	4,835	10,275	62,220	17,895	938
1995	6,120	4,782	10,902	61,578	44,489	3,447
1996	5,807	5,118	10,925	72,299	32,598	2,883
1997	5,334	4,680	10,014	62,643	28,535	1,568
1998	5,700	4,607	10,307	73,145	25,336	2,214
1999	5,632	6,139	11,771	95,702	78,313	1,823
2000	5,486	5,472	10,958	64,753	83,152	2,286
2001	4,012	3,024	7,036	77,959	19,061	772
2002	4,929	3,442	8,371	73,223	33,542	1,519
2003	7,274	5,131	12,405	87,034	79,624	1,792
2004	4,969	5,696	10,665	66,154	70,313	1,510
2005	6,106	7,816	13,922	75,742	117,122	1,683
2006	6,189	8,443	14,632	40,343	100,799	1,705
2007	4,784	7,211	11,995	43,291	82,758	1,246
2008	4,771	6,220	10,991	31,998	131,182	1,788
ALL	**Sets on all types of schools Lances sobre todos tipos de cardumen**					
1993	6,266	15,283	21,549	219,492	83,830	9,657
1994	6,113	15,409	21,522	208,408	70,126	34,899
1995	6,827	15,486	22,313	215,434	127,047	45,321
1996	7,051	16,555	23,606	238,607	103,973	61,311
1997	7,076	19,267	26,343	244,878	153,456	64,272
1998	6,898	20,717	27,615	253,959	140,631	44,129
1999	6,262	19,270	25,532	281,920	261,565	51,158
2000	5,994	18,420	24,414	255,231	204,307	94,640
2001	4,839	18,574	23,413	382,702	143,561	61,156
2002	5,794	21,503	27,297	412,507	153,303	57,440
2003	7,980	24,348	32,328	381,107	274,529	54,174
2004	5,584	22,465	28,049	269,597	198,664	67,592
2005	6,745	24,981	31,726	267,599	261,780	69,826
2006	7,347	24,228	31,575	166,330	297,408	83,978
2007	6,162	21,939	28,101	170,264	208,290	63,074
2008	6,499	22,078	28,577	185,846	295,530	75,653

TABLE A-8. Types of floating objects on which sets were made. The 2008 data are preliminary.
TABLA A-8. Tipos de objetos flotantes sobre los que se hicieron lances. Los datos de 2008 son preliminares.

OBJ	Flotsam Naturales		FADs Plantados		Unknown Desconocido		Total
	No.	%	No.	%	No.	%	
1993	1,138	55.2	825	40.0	100	4.8	2,063
1994	773	27.9	1,899	68.6	98	3.5	2,770
1995	728	20.7	2,714	77.1	77	2.2	3,519
1996	538	13.6	3,405	85.9	22	0.6	3,965
1997	829	14.8	4,728	84.3	53	0.9	5,610
1998	751	13.7	4,612	84.4	102	1.9	5,465
1999	831	18.5	3,632	81.0	20	0.4	4,483
2000	488	13.1	3,187	85.8	38	1.0	3,713
2001	592	10.4	5,058	89.1	24	0.4	5,674
2002	778	13.5	4,966	86.1	27	0.5	5,771
2003	715	13.1	4,722	86.5	20	0.4	5,457
2004	586	11.8	4,370	87.6	30	0.6	4,986
2005	603	12.1	4,281	85.8	108	2.2	4,992
2006	697	10.2	6,123	89.2	42	0.6	6,862
2007	597	10.2	5,188	88.6	72	1.2	5,857
2008	549	8.2	6,074	91.2	34	0.5	6,657

TABLE A-9. Reported nominal longline fishing effort (E; 1000 hooks), and catch (C; metric tons) of yellowfin, skipjack, bigeye, Pacific bluefin, and albacore tunas only, by flag, in the EPO.

TABLA A-9. Esfuerzo de pesca palangrero nominal reportado (E; 1000 anzuelos), y captura (C; toneladas métricas) de atunes aleta amarilla, barrilete, patudo, aleta azul del Pacífico, y albacora solamente, por bandera, en el OPO.

LL	CHN		JPN		KOR		PYF		TWN		USA		OTR[1]
	E	C	E	C	E	C	E	C	E	C	E	C	C
1979	-	-	137,776	67,932	5,021	2,305	-	-	3,138	2,293	-	-	-
1980	-	-	138,143	75,639	11,788	5,907	-	-	3,000	1,611	-	-	-
1981	-	-	131,254	59,226	19,731	6,540	-	-	5,952	2,948	-	-	-
1982	-	-	116,210	61,369	18,612	7,489	-	-	8,117	3,910	-	-	-
1983	-	-	127,177	69,563	14,675	6,478	-	-	4,850	2,311	-	-	49
1984	-	-	119,628	57,262	11,767	4,490	-	-	3,730	1,734	-	-	-
1985	-	-	106,761	74,347	19,785	10,508	-	-	3,126	1,979	-	-	2
1986	-	-	160,572	111,673	30,765	17,432	-	-	4,874	2,569	-	-	68
1987	-	-	188,386	104,053	36,436	19,405	-	-	12,267	5,335	-	-	273
1988	-	-	182,709	82,384	43,056	10,172	-	-	9,567	4,590	-	-	234
1989	-	-	170,370	84,961	43,365	4,879	-	-	16,360	4,962	-	-	9
1990	-	-	178,414	117,923	47,167	17,415	-	-	12,543	4,755	-	-	-
1991	-	-	200,374	112,337	65,024	24,644	-	-	17,969	5,862	42	12	173
1992	-	-	191,300	93,011	45,634	13,104	500	88	33,025	14,142	325	106	128
1993	-	-	159,956	87,976	46,375	12,843	2,605	80	18,064	6,566	415	81	227
1994	-	-	163,999	92,606	44,788	13,249	3,410	574	12,588	4,883	303	26	523
1995	-	-	129,599	69,435	54,979	12,778	3,452	559	2,910	1,639	828	179	562
1996	-	-	103,649	52,298	40,290	14,120	4,219	931	5,830	3,554	510	181	184
1997	-	-	96,385	59,325	30,493	16,663	5,490	1,941	8,720	5,673	464	216	752
1998	-	-	106,568	50,167	51,817	15,089	6,415	2,858	10,586	5,039	1,008	405	1,176
1999	-	-	80,950	32,886	54,269	13,295	9,190	4,446	23,247	7,865	1,756	470	1,156
2000	-	-	79,327	45,216	33,585	18,758	10,230	4,382	18,152	7,809	736	204	4,868
2001	13,054	5,162	102,220	54,775	72,261	18,200	11,200	5,086	53,224	20,060	1,438	238	15,614
2002	34,894	10,398	103,912	45,401	96,273	14,370	10,700	3,238	77,051	31,773	611	138	10,258
2003	43,290	14,548	101,236	36,187	71,006	15,551	14,048	4,101	74,322	28,328	1,313	262	11,595
2004	15,886	4,033	76,828	30,937	55,861	14,540	17,865	3,030	51,697	19,535	1,047	166	9,194
2005	16,895	3,681	65,085	25,712	15,798	12,284	13,359	2,514	38,536	12,229	2,579	557	5,442
2006	*	969	57,300	21,727	*	8,752	11,783	3,220	38,089	12,375	234	121	6,335
2007	12,229	2,624	49,621	21,992	10,548	6,037	9,669	3,753	19,911	9,498	2,686	432	3,553

[1] Includes the catches of—Incluye las capturas de: Belize, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá, Vanuatú

TABLE A-10. Numbers and well volumes, in cubic meters, of purse-seine and pole-and line vessels of the EPO tuna fleet, 1977-2008. The data for 2008 are preliminary.
TABLA A-10. Número y volumen de bodega, en metros cúbicos, de buques cerqueros y cañeros de la flota atunera del OPO, 1977-2008. Los datos de 2008 son preliminares.

	PS		LP		Total	
	No.	**Vol. (m^3)**	**No.**	**Vol. (m^3)**	**No.**	**Vol. (m^3)**
1977	253	189,967	116	6,780	369	196,746
1978	271	192,259	118	6,736	389	198,995
1979	282	195,494	50	4,341	332	199,835
1980	270	196,476	50	4,186	320	200,662
1981	251	196,484	41	3,308	292	199,792
1982	223	178,234	40	3,016	263	181,250
1983	215	149,404	60	3,940	275	153,344
1984	175	121,650	40	3,245	215	124,895
1985	178	137,814	25	2,574	203	140,387
1986	166	131,806	17	2,060	183	133,867
1987	177	152,351	29	2,376	206	154,727
1988	189	156,636	36	3,274	225	159,910
1989	178	141,956	30	3,135	208	145,091
1990	172	143,946	23	2,044	195	145,990
1991	155	124,501	19	1,629	174	126,131
1992	160	117,017	19	1,612	179	118,629
1993	152	118,730	15	1,543	167	120,272
1994	167	122,214	20	1,725	187	123,939
1995	175	124,096	20	1,784	195	125,880
1996	183	132,731	17	1,639	200	134,370
1997	194	146,533	23	2,105	217	148,637
1998	203	161,560	22	2,217	225	163,777
1999	208	180,652	14	1,656	222	182,308
2000	205	180,679	13	1,310	218	181,989
2001	205	189,897	10	1,259	215	191,156
2002	218	199,870	6	921	224	200,791
2003	215	202,755	3	338	218	203,093
2004	218	206,473	3	338	221	206,811
2005	222	213,286	4	498	226	213,784
2006	226	225,950	4	498	230	226,448
2007	228	226,878	4	380	232	227,258
2008	218	224,686	4	380	222	225,066

TABLE A-11a. Estimates of the numbers and well volume (cubic meters) of purse-seine (PS) and pole-and-line (LP) vessels that fished in the EPO in 2007, by flag and gear. Each vessel is included in the total for each flag under which it fished during the year, but is included only once in the "Grand total"; therefore the grand total may not equal the sums of the individual flags.

TABLA A-11a. Estimaciones del número y volumen de bodega (metros cúbicos) de buques cerqueros (PS) y cañeros (LP) que pescaron en el OPO en 2007, por bandera y arte de pesca. Se incluye cada buque en los totales de cada bandera bajo la cual pescó durante el año, pero solamente una vez en el "Total general"; por consiguiente, los totales generales no equivalen necesariamente a las sumas de las banderas individuales.

Flag Bandera	Gear Arte	Well volume —Volumen de bodega (m^3)					Total	
		<401	401-800	801-1300	1301-1800	>1800	No.	Vol. (m^3)
		Number—Número						
BOL	PS	1	-	-	-	-	1	222
COL	PS	3	1	7	3	-	14	14,689
ECU	PS	35	19	16	4	9	83	59,517
ESP	PS	-	-	-	-	3	3	6,955
GTM	PS	-	-	-	1	-	1	1,475
HND	PS	1	1	1	-	-	3	1,700
MEX	PS	8	10	23	17	-	58	57,859
	LP	4	-	-	-	-	4	380
NIC	PS	-	-	6	-	-	6	7,107
PAN	PS	1	4	9	10	4	28	36,782
PER	PS	-	1	-	-	-	1	542
SLV	PS	-	-	1	-	3	4	7,415
UNK	PS	2	-	-	-	-	2	494
USA	PS	1	-	-	2	-	3	3,288
VEN	PS	-	-	11	9	2	22	29,684
VUT	PS	-	-	1	2	-	3	3,609
Grand total— Total general	PS	51	36	74	46	21	228	
	LP	4	-	-	-	-	4	
	PS + LP	55	36	74	46	21	232	
		Well volume—Volumen de bodega (m^3)						
Grand total— Total general	PS	12,758	20,374	82,227	67,445	44,074		226,878
	LP	380	-	-	-	-		380
	PS + LP	13,138	20,374	82,227	67,445	44,074		227,258

- : none—ninguno

TABLE A-11b. Estimates of the numbers and well volumes (cubic meters) of purse-seine (PS) and pole-and-line (LP) vessels that fished in the EPO in 2008 by flag and gear. Each vessel is included in the total for each flag under which it fished during the year, but is included only once in the "Grand total"; therefore the grand total may not equal the sums of the individual flags.

TABLA A-11b. Estimaciones del número y volumen de bodega (metros cúbicos) de buques cerqueros (PS) y cañeros (LP) que pescaron en el OPO en 2008, por bandera y arte de pesca. Se incluye cada buque en los totales de cada bandera bajo la cual pescó durante el año, pero solamente una vez en el "Total general"; por consiguiente, los totales generales no equivalen necesariamente a las sumas de las banderas individuales.

Flag Bandera	Gear Arte	Well volume —Volumen de bodega (m^3)					Total	
		<401	401-800	801-1300	1301-1800	>1800	No.	Vol. (m^3)
		Number—Número						
COL	PS	3	2	7	3	-	15	15,110
ECU	PS	35	20	16	4	9	84	60,519
ESP	PS	-	-	-	-	4	4	10,116
GTM	PS	-	-	-	2	-	2	3,056
HND	PS	-	1	1	-	-	2	1,559
MEX	PS	7	7	21	16	-	51	52,920
	LP	4	-	-	-	-	4	380
NIC	PS	-	-	5	-	-	5	6,023
PAN	PS	-	4	9	10	4	27	36,711
PER	PS	-	2	-	-	-	2	1,000
SLV	PS	-	-	1	-	3	4	7,415
USA	PS	1	-	-	-	-	1	170
VEN	PS	-	-	10	8	2	20	28,309
VUT	PS	-	-	1	2	-	3	3,609
Grand total— Total general	PS	45	36	71	44	22	218	
	LP	4	-	-	-	-	4	
	PS + LP	49	36	71	44	22	222	
		Well volume—Volumen de bodega (m^3)						
Grand total— Total general	PS	11,758	20,556	79,357	64,580	48,435		224,686
	LP	380	-	-	-	-		380
	PS + LP	12,138	20,556	79,357	64,580	48,435		225,066

- : none—ninguno

TABLE A-12. Minimum, maximum, and average capacity, in thousands of cubic meters, of purse-seine and pole-and-line vessels at sea in the EPO during l998-2007 and in 2008, by month.
TABLA A-12. Capacidad mínima, máxima, y media, en miles de metros cúbicos, de los buques cerqueros y cañeros en el mar en el OPO durante 1998-2007 y en 2008 por mes.

Month Mes	1998-2007			2008
	Min	Max	Ave.-Prom.	
1	69.6	157.7	120.4	121.4
2	104.3	175.3	132.9	151.0
3	98.0	159.9	126.9	139.6
4	101.3	164.2	130.4	143.4
5	95.2	164.4	127.9	146.8
6	103.3	175.0	130.4	155.4
7	87.6	170.4	133.8	166.2
8	62.2	140.2	109.2	102.9
9	92.9	137.7	119.0	114.8
10	93.6	172.2	136.6	151.7
11	77.3	145.0	121.0	150.8
12	33.1	116.4	71.1	77.7
Ave.-Prom.	84.9	156.5	121.6	135.1